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MODERN VALUE INVESTING

25 tools to invest with a MARGIN OF SAFETY in today's financial environment

Modern Value Investing

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Dedicated to my wife Ana and son Val.

Special thanks to Aviad Daniely and all my YouTube supporters.

PREFACE

My personal goal is to help people reach their financial goals. One way of doing that is through investing education. This book is my attempt to help with the development of a strong investing mindset and skillset to enable the reader in making better investment decisions and finding better investments.

There is a gap within the value investing world. Benjamin Graham published The Intelligent Investor in 1949 with several subsequent editions up to 1972 while Seth Klarman published Margin of safety in 1991. More than 50 years have passed since Graham published his masterpiece and almost 30 since Klarman did the same. Therefore, there is the need for a contemporary book to account for all the changes the financial environment we live in.

The book has 4 parts. The first part discusses the most important psychological traits a successful investor should have. Part 2 describes 25 tools that will help with the actual investment analysis and part 3 applies those tools on an example. Part 4 is food for investing thought as it discusses modern approaches to investing from an all-weather portfolio strategy to hyperbolic discounting and other things you might find interesting or take advantage of when the time will be right, even if that might happen just a few times in your life.

Hope you enjoy the book and the videos posted on my YouTube channel. Sincerely appreciate your support.

BOOK 1

Mindset of a value investor

Chapter 1

Value investing psychology

“Be greedy when others are fearful

and fearful when others are greedy”

Benjamin Graham

(This quote is so important that it can’t be overused)

Four things to understand before becoming a value investor

"The single greatest edge an investor can have is a long-term orientation." Seth Klarman

The thing that is mostly overlooked when discussing investment strategies is personal goals. Investing is extremely personal as we all work hard for our money and we are not investing just for the sake of investing. At the end of our investment process, there are some personal goals that are supposed to improve the quality of our lives; be it having enough money to retire, achieving financial freedom, paying for your children's college tuition, traveling the world and who knows what might be your heart's desire. Therefore, before deciding on any kind of investing activity, it is extremely important to first know yourself, your investing goals and how you will react to anything that might happen in the stock market, good or bad. Before applying a value investment strategy, you should understand the following:

1. It is not possible to make rational investment decisions when your current lifestyle depends on your investments

In the short term, all investments can be extremely volatile. Ray Dalio, famous for his historical approach to investing always reminds us that each asset class will probably decline 70% or more at least once during our investing career. Therefore, a value investing strategy should be applied only with a long-term mindset where your current lifestyle doesn't depend on what is going on in the stock market. If your lifestyle depends on the market, you will not be able to make rational investing decisions and take advantage of market irrationalities, which is the main factor behind value investing. When an asset class like stocks are dropping, a value investor has to start buying when the discount offered by the price drop is justified by the value of the stocks even if the stocks might temporarily drop more. It is impossible to catch the eventual bottom in a stock market crash. If

your current lifestyle depends on your investments, there is no way you will have the courage to buy the extreme bargains the market often offers because of fear that those might go even lower.

To illustrate how things can go wrong when investing it is good to know that even Warren Buffett's Berkshire Hathaway portfolio was down more than 50% twice in the last 50 years (1974 & 2008/2009). Therefore, if your lifestyle doesn't allow the kind of downturns in your invested portfolio, that affect even Buffett, you should really avoid investing in the stock market. On top of that, the best returns come from heavily investing in periods when all others are selling in panic as only then, value can be bought on the cheap.

2. You will probably underperform in extreme bull markets

Value investing is not correlated to what is going on in the stock market. Therefore, there will be occasions where a value investing strategy underperforms the general market, especially when there are irrational forces driving the market. This has been the case in the 1990s when value investing was proclaimed dead and Warren Buffett was derided because of his unwillingness to invest in internet companies. In 1999 Berkshire lost 19% of its market value while the S&P 500 grew 21%. After the dot-com bubble burst, most of the crowd lost their money while Buffett came out unscathed with market-beating long term returns. In 2000, 2001 and 2002 Berkshire's stock returned 26.6%, 6.5% and -3.8% respectively, while the S&P 500 returned -9.1% in 2000, -11.1% in 2001 and -22.1% in 2002. I won't even mention the declines in the technological NASDAQ index which make the declines in the S&P 500 look like a treat. From 1999 to 2002, a period which includes one of the worst bear markets in history, $100 invested in Berkshire in 1999 would have returned $104 in 2002 while the same amount invested in the S&P 500 would be at only $75. Therefore, sticking to value investing won't make you win every year but it will sure make you finish your investing life marathon with a satisfying return in comparison to the risk taken with a guarantee that you will reach your financial goals.

A situation where value investing isn't outperforming is happening

as I am writing this (2018). The stock market has been in a bull market for more than 9 years now, driven by the extreme liquidity global central banks have put into financial markets. There hasn't been much benefit in being a value investor in the last years as a rising tide lifts all boats, while the point of value investing is not to leave you naked when the tide shifts. However, being a value investor now can provide the necessary protection to minimize your losses and increase your returns when the next bear market comes. And, a bear market always comes.

3. You have to be a contrarian; fearful in frothy markets and convinced in panicky ones

In order to take advantage of value investing opportunities you have to be able to think for yourself and not get under the crowd's influence. Most investors are easily influenced by short term events and news, they panic in a recession while they quickly become exuberant in periods of economic growth and stability where most follow a few strong trends. The inevitable recession panic makes them sell stocks at whatever price and creates huge bargains while the euphoria creates bubbles. A value investor takes advantage of such opportunities by doing the opposite of what the herd does. This allows for lower risk and higher returns – the ultimate goal for any investor.

Is this overwhelming? Don't worry, this book is all about how to take advantage of the above described market situations and will provide you with many investment strategies that lead to low risk and high returns over the long term and food for thought to develop your investing mindset.

4. Value investing is mostly boring

Value investing consists of doing lots of research, saying no to thousands of investments opportunities, buying only when something meets all the criteria, and then waiting for the market to recognize the value of the undervalued investment you found. Eventually the market always recognizes value but it can take years for that to happen and we will also discuss strategies on how to shorten the recognition of value but nevertheless, excluding a bit of portfolio rebalancing, there

isn't much short-term excitement in being a value investor. However, over the long-term, value investing provides the highest returns with the lowest risk, something to be very excited about. To put it in the words of Nobel Prize economist Paul Samuelson:

"Investing should be like watching paint dry or grass grow. If you want excitement, take $800 and go to Las Vegas."

Samuelson's quote grasps the essence of an everlasting Wall Street battle between investors and speculators. It is extremely important to know who you are before you apply any kind of investment strategy as you cannot go against your nature for a long time. Trying to be a speculator while you are inherently a value investor will lead you to make the wrong speculations at the wrong time while if you are a speculator at heart, you won't have the patience to look for a proper margin of safety in an investment, nor the patience for the value of an investment to get fully appreciated by the market. Therefore, it is extremely important to understand who you are, an investor or a speculator. The following part continues to discuss a value investing mindset by differentiating between speculators and investors.

Are you a value investor or a speculator?

"Compound interest is the eighth wonder of the world. He who understands it, earns it, he who doesn't, pays it." Albert Einstein

Even if you already know you are a value investor at heart, it is important to approach this book section meticulously as it will give you better insights into how the market works by describing a speculator's attitude.

An investor is a person who is convinced that long term investment returns are perfectly correlated to the underlying earnings of the business bought in relation to the paid price. An investor has the necessary patience to wait for an investment to be at the right price before buying, and then the patience to enjoy, or to wait for the returns over a long period of time. Warren Buffett often reminds us of how important patience is in investing:

"My favorite holding period is forever".

On the other hand, a speculator expects to profit from his beliefs on where the stock price will go in a certain period of time, up or down. Fundamentals are not that important and the focus lies on estimating future or taking advantage of current trends in stock price movements. A speculator can be extremely profitable and do so consistently but then he has to be among the very top traders and able to take advantage of the inexperienced new traders. Being the best in such a highly competitive environment with quant hedge funds and high frequency traders is a big issue for part-time speculators, as most people don't have the capital nor the time to get good at speculating. Just remind yourself how much money has been lost by the average speculator in the aftermath of the not so distant 2000 and 2009 financial bubbles. Perhaps when this book gets published the talk will be about the Central Bank bubble bursting?

It is also important to differentiate between an investment and a

speculation. An investment is simply an asset that rewards the owner by constantly creating new value through its business operations. Think of the rental income an apartment building offers, the dividends from a stock or any other form of value creation. On the other hand, a speculation is an asset where the focus doesn't lie on the process of creating value, but only on the market's perception, i.e. the price. A clear example of a speculation is a stock market option that is out of the money[1] and will probably expire worthless. However, a stock can be both an investment and a speculation, depending on the intention of the buyer.

Summing it all up, speculation is a negative sum game as the average speculator loses money due to transaction costs and the fact that the best traders and high frequency hedge funds take most of the profits. On the contrary, investing is a positive sum game as the dividends and earnings constantly add value quarter by quarter, making it highly unlikely that the current value will be smaller than the future value for the investor specially over a long period of time.

There are many traits successful value investors have and we will discuss them in detail through the book. However, here are some of them to get you started:

- Unemotional, fear and greed should be others' weaknesses that create investing opportunities.
- Confident in one's analysis in order to respond to market movements with reason. Thus, buy more of a stock if prices fall but the fundamentals remain unchanged.
- Fearful in frothy markets and convinced in panicky ones.
- Able to take advantage of price fluctuations and Mr. Market's erratic behavior.
- Convinced that markets aren't efficient as inefficiency is what leads a value investor to outsized returns.
- Unafraid to pay taxes on gains and transaction costs but fear unnecessary fees.
- Capable to clearly distinguish between stock price fluctuations and underlying business reality.

- Capable to clearly distinguish between the value of an investment and its price.
- A believer that the stock market will provide decent returns and allow for those returns to compound over time.

If you have more of the following characteristics, value investing is probably not for you:

- You believe that the market is efficient, thus the market's price is always the correct price as it includes all available information. Index investing is the best option then.
- You look to the market for guidance. For example, you don't feel confident in buying when the stock price has recently fallen and prefer to buy when the stock price is going up in order not to miss on the action.
- Looking at fundamentals and underlying earnings is a waste of time as all the information is already included in the price.
- Have the tendency to panic when prices fall and sell, instead of buying more.
- Think that if market prices are falling, the business must be doing badly.
- Follow the herd, become greedy when others are greedy and fearful when others are fearful.
- Spend little or no time on analyzing investment opportunities.
- Think the stock market is there to make money, especially by using investment shortcuts like leverage or options.
- You have a very rosy picture of the world when things go well, think that there will be no more recessions and the stocks you own will grow indefinitely.
- Think stocks are the best investment because the yield on bonds and savings is low.
- Seek simple investing formulas by projecting short term patterns into the future.

Let's dig deeper into the characteristics of a value investor.

Main characteristics of value investors – mindset

“Price is what you pay and value is what you get.” Warren Buffett

We’ll first discuss how emotional stability and a proper, fundamental approach to investing, aid the value investor and then how emotions, impatience, greed and fear usually destroy the wealth of a speculator over the long term.

How to be unemotional about your investments

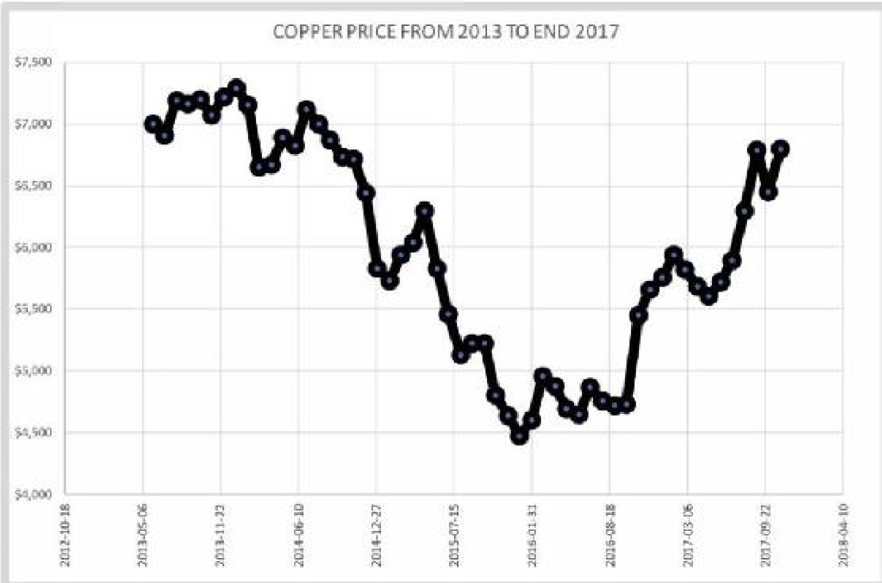
Let me be frank here, being unemotional is easier said than done. However, a value investing strategy that leads you towards analyzing the intrinsic value of an asset helps in not making you react emotionally to market vagaries. There are a few steps that help not get stranded and give you the essential conviction to persevere with what you are doing no matter what the market does.

1. Differentiate between intrinsic value and market created, illusionary pricing

As value investors, we have to differentiate between the intrinsic (real) value an asset has and the temporary market price. Market prices can go to extremes, both negative and positive.

A great example of how financial markets have a temporary influence on real assets can be seen from the variations in the price of copper. Copper is a metal that is used almost everywhere and as the world develops, there is constantly more demand for it, especially as the world is turning electric. However, market speculators, often buy or sell copper in quantities that are way beyond the available copper in global warehouses. How it this possible? Well, speculators often trade on margin and use derivatives, thus they use credit and contracts to leverage their paper trades. This allows them to significantly influence the price of copper in the short and medium term even if not an ounce of actual copper has exchanged hands.

Figure 1 It is interesting to see how the value of copper is stable but its price extremely volatile



Source: London Metal Exchange

Additionally, mining supply cannot change fast as it takes years to develop or enlarge a mine. In 2015 and 2016 a minimum price for most copper miners to operate positively was at least $5,000 per ton. In such a moment, as the years 2015 and 2016 were, it is clear that the price slump is temporary because the situation is not sustainable in the long term as the real supply demand balance for copper lies above the traded price. This creates an opportunity for the value investor to buy value where others see only a low price and panic. Needless to say, after just more than a year below $5,000 per ton, copper prices soon returned to a more natural price level in 2017.

Even if the majority of investors panic when they see an asset with low and declining prices, a value investor is capable to rationally analyze the situation and buy related stocks at a discount when others are selling in panic. This is possible thanks to the immense knowledge a value investor has about the subject and thanks to the liquidity cushions a proper value investor always has. For the knowledge part it is simple, the more you know about an investment the lower is your

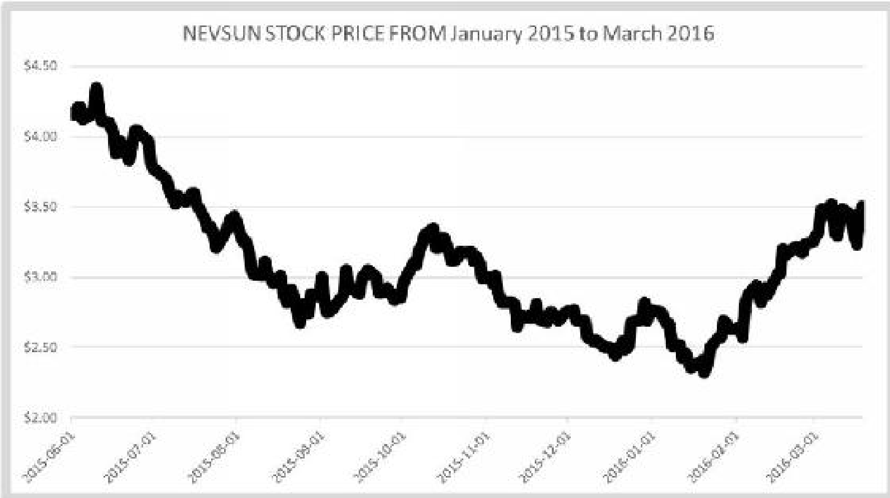
risk and the higher the returns and that is why I wrote this book, to give you as much knowledge as possible about value investing. With time and experience a value investor can easily differentiate between founded and unfounded market panics, while the liquidity cushion is a strategy that allows you to buy when others are selling and to keep a cool mind.

1. Have a liquidity cushion when buying a stock – never buy a full position immediately

Once we have determined that a stock is trading below its intrinsic value it becomes an obvious buy. However, there are various approaches on how to buy a stock. A value investor should never buy a full position all at once because even if a bargain stock is trading at $5 while its intrinsic value is $10, it is always possible for the stock to become even cheaper due to various market vagaries. A cash cushion allows us to buy more if a stock trades cheaper and further increase your investment returns.

I will use Nevsun Resources (NYSE: NSU) as an example. Nevsun Resourses was a holding of mine in 2016, it is a Canadian miner with operations in an obscure country like Eritrea. Towards the end of 2015, NSU's stock, usually trading above $4, started trading below its book value of $3.4 as commodity prices fell and the market was averse to all miners. However, NSU was a special case because of those $3.4 of book value, about $2.5 was in cash in Canadian banks and $0.5 was in highly liquid gold inventory while the company had no debt. This means that we had a situation where the liquidation value of the company was at least $3 per share while the upside was pretty large because the Eritrean mine was producing yearly free cash flows of around $0.4 per share. If I put an average price to cash flow ratio of 12 for miners to NSU's cash flows I would get to a value of $4.8. By adding the $3 in highly liquid assets, NSU's stock had an intrinsic value of $7. (Note: after 2016 many things happened with NSU but that is not the point of this example)

Figure 2 Buying in stages lowers your risk and increases your returns as the market can always become even more irrational



Source: NYSE

Now, if I would have invested $10,000 in NSU when it was clearly a bargain at $2.7 in August 2015, with the intention to sell my position when the stock price would reach the company's book value, I would have done well as I would have been able to sell the stock at $3.5 already in March 2016. So, the $10,000 would be $12,962 for a profit of $2,962 and a 29.6% return. (I have excluded dividends here for simplicity reasons)

However, under the assumption a value investor should always keep in mind, which is that stock prices can always go much lower, I could have also said that I will buy $2,500 at $2.7, $2,500 at $2.5, $2,500 at $2,3 and $2,500 at $2.1.

NSU's stock price reached $2.5 in December 2015, $2.3 in January 2016 and did not reach $2.1 in that period. Up to February 2016, with the three purchases I would have accumulated 3,012 NSU shares for a total cost of $7,500. In March 2016, I could have sold those stocks for $3.5 or $10,545. Thus, for a profit of $3.045 or a 40.6% return on the capital employed with much less risk as the maximum decline of the first portfolio would have been 15% and just 8% for the second

portfolio.

Partial purchases often give a higher return for less capital employed. This is a perfect strategy that lowers your risk and increases your returns because it allows for increased purchases at lower prices. Additionally, sometimes a stock price falls for very good reasons of which the value investor can be unaware. By not buying a full position immediately, the losses are limited if a change in the underlying business fundamentals suddenly arises.

1. Portfolio cash cushion

Apart from individual stocks, a liquidity cushion must also be applied to the whole portfolio as, especially in market panics, the complete market can go to incredibly low levels! Seth Klarman, the manager of one of the most successful value hedge funds in the world, The Baupost Group and the author of the book Margin of Safety which provided me the inspiration for this book, is known to often have up to 50% of his portfolio in cash when there are no low risk bargains to be found, as was the case in the 2000 dot-com bubble. Having such a large stash of cash allows him to take advantage of future market pricing mistakes that always eventually arise, as sooner or later the market always enters some kind of irrational panic mode. (Note: according to Bloomberg Klarman’s portfolio was 42% in cash in 2017: annual return from 1983 to 2008 was 20%)

How to take advantage of other people's emotions

It is not just about having cash, it is also about having the right mindset that allows you to make the right investment decisions, which are usually opposite to what the majority, i.e. the market is doing.

1. Be fearful in frothy markets and convinced in panicky ones

History shows that value investing beats growth investing in 93% of cases[2], as index investors logically match the market's performance minus fees while speculators rarely outlast one market cycle. Such an outcome is mostly because value investors buy value and take advantage of the market's volatility. Speculators, usually buy high as they need a buying signal from a previous upward market move. Similarly, speculators usually sell low as they are afraid that prices might go even lower or are forced to sell due to a margin call[3]. New York Stock Exchange (NYSE) data on total margin debt used by investors through brokerage accounts shows exactly how the majority of speculators buy stocks at the highest levels using large amounts of debt and forcefully sell those stocks in a bear market as margin exposures quickly fall.

Figure 3 Margin debt is always at the highest levels at market peaks

Source: NYSE

A value investor should do the opposite, buy when stocks are cheap and sell when stocks are expensive. This is why both the speculator and the value investor keep an eye on what is going on in the market. The first to find buy or sell signals, the second to take advantage of Mr. Market's erratic behavior.

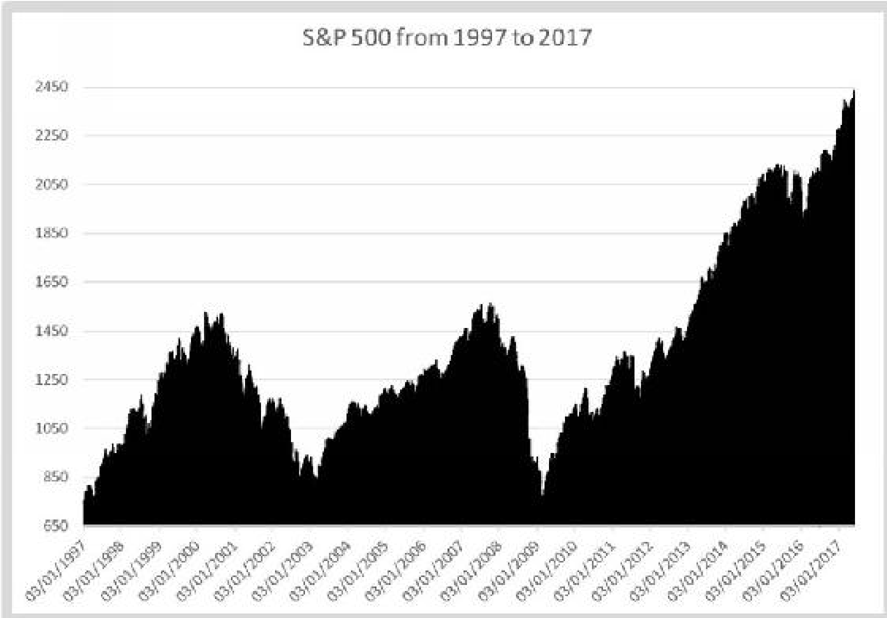
1. Take advantage of the manic-depressive and irrational Mr. Market

A value investor's core conviction is that financial markets are more often than not, completely irrational. This allows value investors to buy stocks at bargain prices and sell when the market values those stocks at a fair price again or is exuberant about stocks. In depth analysis and investing should be done only when there is a margin of safety that allows the value investor to take action and buy stocks when the market is in turmoil. We could say that value investors rejoice bear markets as they give them the opportunity to buy stocks at extremely low prices. Let's first discuss who Mr. Market is and why markets are often irrational.

The Mr. Market allegory was created by Benjamin Graham in order to explain how the stock market works. Imagine you are one of two business partners that own a business. The other partner, Mr. Market is manic-depressive and offers you his stake in the business on a daily basis, at low prices when he is depressed and at extremely high prices when he is euphoric. Fortunately, you always have the option to decline his offer as you know that tomorrow there will be a new offer on the table, possibly at a better price.

It is easy to find irrational behavior in markets and especially in individual stocks. A look at the S&P 500 chart from 1997 to 2017 shows how there are longer periods of market positivity interrupted by short periods of extreme panic, usually in combination with a recession. How can anybody call something that jumps 100%, then falls 50%, then jumps 100% only to fall 50% again and jump more than 220% in a time span of 20 years, rational? Additionally, the stock market should represent actual economic activity, which it doesn't. Actual economic activity doesn’t experience such swings and is pretty easy to forecast in the long term.

Figure 4 The S&P 500 from 1997 to 2017



Source: Author’s data

Even if the stock market looks extremely scary in a recession due to collapsing earnings and bankruptcies, recessions do not last that long at all. According to the National Bureau of Economic Research, the average duration of a recession in the U.S. from 1945 to 2009 was just 11 months.

Therefore, it is clear how the market’s behavior is irrational as most investors, or better to say speculators, are afraid stock prices will go even lower during a recession and sell in panic. Their selling reinforces the downward trend and creates a negative spiral. The same principle holds in a bull market but works in the opposite way.

Value investors save the day in a recession as at one point in time the majority sees the bargains and invests, monetary policy becomes accommodative and a new bull market is usually born. Value investors buy at market bottoms from pessimists. When stocks recover a bit, alongside good economic data, more and more people dare to invest. After a few years, people forget what a bear market is and mindlessly invest in stocks again, creating a bubble. The irrationality on financial

markets repeats itself constantly, going from euphoric periods, usually when stocks are extremely expensive into extreme panic environments where it seems that the end of the world as we know it is coming.

Figure 5 The stock market cycle

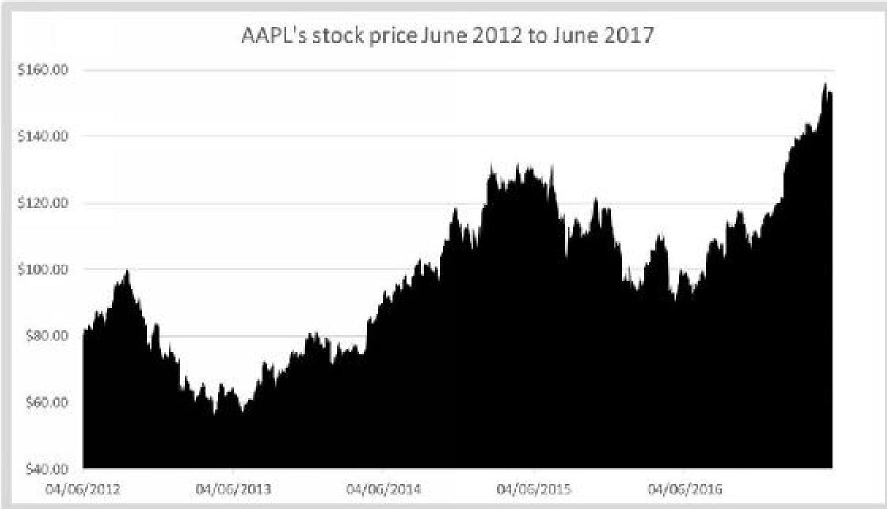
Source: Author's analysis

The stock market cycle is especially emphasized when it comes to market sectors and individual stocks. Even if nothing significant changes in the underlying long-term fundamentals of a sector or a stock, market prices often get extremely volatile. What better stock to explain this than the currently largest company on the planet, Apple (NASDAQ: AAPL). In the period from June 2012 to September 2012 AAPL's stock price went from $80 to $100 on expectations of great iPhone 5 and iPad sales. After it became clear that iPhone sales would be 'only' good and AAPL's revenues would grow 'only' 9% for the year, the stock quickly tumbled to a low of $55 in 2013. In 2014, AAPL's stock price surged again on iWatch and iPhone 6 expected sales and the stock price reached a high of $130 in 2015. As it became clear that AAPL's earnings will be 'only' $9.22 for the year 2015, the stock price tumbled again to a level below $90 in April of 2016 where AAPL's price to earnings ratio was below 10 while the S&P 500 had a valuation of 24. After that, rumors about new and exciting iPhones 7

and 8 started circling and the stock price quickly rose to $155 in less than 12 months.

In the meantime, AAPL showed stable earnings, a loyal and stable customer base, no scandals or similar issues, paid a nice dividend of around $2 per share and bought back shares for around $35 billion per year.

Figure 6 AAPL's stock price from June 2012 to June 2017



Source: Author's data

It will forever baffle me how emotional and how disrespectful of fundamentals Mr. Market is. Would fundamentals be important, AAPL's stock price would fluctuate much less and steadily grow alongside its growing earnings, dividends and buybacks. However, thanks to Mr. Market's moody personality, the intelligent value investor is often provided with excellent investment bargains and allowed to sell those cheaply purchased stocks at remarkably high prices when Mr. Market turns euphoric.

To sum up the story about Mr. Market investors should remember the following:

- The market is emotional, moody, sometimes euphoric, and sometimes depressive.
- The market is often irrational.
- You do not have to buy from the market, you can wait for the price to fall into your buying range.
- Mr. Market is there to serve you, not to guide you.
- The market is a voting machine in the short run and a weighing machine (earnings) in the long run.
- The market will offer a chance to buy low and sell high to

the patient investor.

- Markets are sometimes efficient, but not always.

1. Know that markets are not efficient

I hope that by now you already accepted the notion that markets aren't really efficient. However, it is extremely important to dig into a little bit of stock market and academic history in order to show how the two schools of thought evolved. The funny thing is that both opinions have made investors money as the market is a positive sum game after all, however value investors have performed much better than passive investors.

Chapter 2

Value and behavioral finance

"The most important quality for an investor is temperament, not intellect."

Warren Buffett

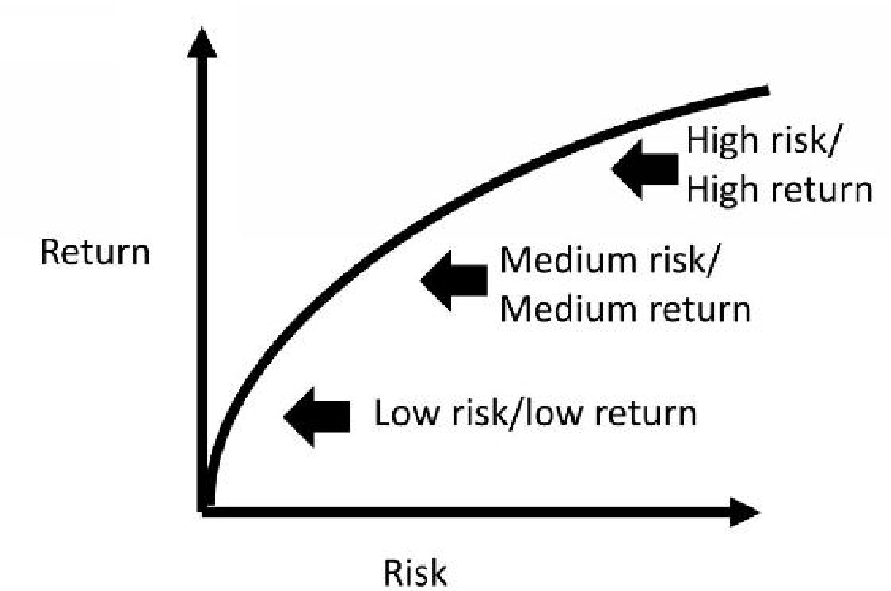
The efficient market hypothesis and the issues with passive investment vehicles

"I have a name for people who went to the extreme efficient market theory- which is 'bonkers'. It was an intellectually consistent theory that enabled them to do pretty mathematics. So I understand its seductiveness to people with large mathematical gifts. I just had a difficulty in that fundamental assumption did not tie properly to reality" Charlie Munger

The notion of market efficiency is that low risk leads to low returns while only high risk leads to high returns. The first to officially write about this was Nobel Prize winner Harry Markowitz back in 1952 and he is now known as the father of the modern portfolio theory.

The efficient market hypothesis was further developed by the Chicago School of Economics and especially Eugene Fama, another Nobel prize winner. Fama's 1970 Journal of Finance article, entitled "Efficient Capital Markets: A Review of Theory and Empirical Work" laid the basis for the mindless investing that has been going on for almost half a century now. The main concept behind the efficient market hypothesis is that the price of a security is always right as the market quickly prices in all new information. Therefore, there is no point in picking stocks as every stock should be perfectly priced in relation to its known risks and returns.

Figure 7 Risk and reward according to the modern portfolio theory



Source: Author's insight

Such a statement has led to a proliferation of passive investment schemes where an investor is supposed to just buy a basket of securities at the current price and not to think about anything as the market will take care of his returns. Many institutional investors completely disregard fundamental analysis and buy stocks just based on their market capitalization, the higher the value of a company the more they buy of it.

At this moment in time, what few understand is that the huge increase in passive investment vehicles will become self-defeating because who is going to adjust market prices to new information if everybody invests in index funds? When there are only a few who perform fundamental analysis, they can't move stock prices and they will continue moving according to their previous trends even if the fundamentals or the underlying business change.

Another issue related to passive investment vehicles and the efficient market hypothesis is the underlying liquidity of the assets included in an index. As long as there are enough stocks to be bought

by an index, the efficient market idea will work well. But what happens when index funds own most of the stock market? This situation has already happened with gold miners where the Van Eck gold ETFs owns between 10% and 20% of each gold miner. This clearly shows how fundamentals continue to lose importance and how systemic market risks are constantly increasing.

The second issue with liquidity will emerge when those who own these passive investment vehicles start selling in panic. An index fund or ETF will then be forced to unload the respective assets it owns in order to return the capital to the investor or to lower its market exposure. In a bear market, there will be nobody on the other side of such a trade, especially as everyone will know that ETFs are forced to sell. Thus, we can expect much bigger stock market declines in the future than what we have seen in the last 20 years.

Value investing beats growth investing

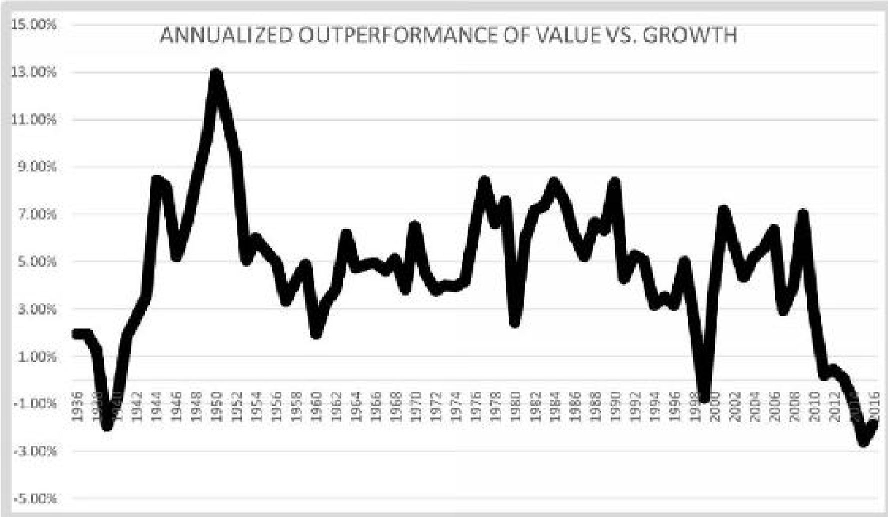
"The intelligent investor is a realist who sells to optimists and buys from pessimists." Benjamin Graham

It is almost funny that Eugene Fama, the Nobel Prize winner and main face behind the efficient market craze has evolved over time and acknowledged that value indeed beats growth investing. The two market anomalies that show how markets aren't efficient after all, are size and value. Fama explains the overperformance through additional risk but we will see in upcoming parts that a value investor approaches risk in a different way than academia. The findings were published in the now famous 1993 Journal of Financial Economics article by Fama and French; *Common risk factors in the returns on stocks and bonds*. Thus, markets are not efficient, and you can easily beat the market by following a value strategy and by buying small caps (stocks with a market capitalization below $2 billion).

Scientifically proven value investing is always the way to go

The extremely valuable data from the research that Fama and French have done is freely available online. I have borrowed the data and the below figure shows the difference in annual returns between the various markets' value and growth portfolios since 1927 where the portfolios are held for 10 years. The value portfolio is created by putting into it all the traded stocks with the lowest 30% of price to book ratios while the growth portfolio is created with the stocks that have a price-to-book ratio in the highest 30% range of the market as usually high price-to-book values describe growth stocks. The results are incredible.

Figure 8 A value portfolio has outperformed a growth portfolio by 4.6% annually since 1926



Source: Kenneth French data

On average a market value portfolio has beaten a market growth portfolio over the next 10 years by 4.6 percentage points per year. A growth portfolio has beaten a value portfolio over the next 10 years only from 1929, 1930, 1999, 2004, 2005 and 2006. So, just 6 times over the last 90 years. To show you how big of a difference 4.6% per year actually is I'll make a quick calculation. As the market average yearly return was 8%, a growth portfolio return was 5.7% and a value portfolio return 10.3%. On a $100,000 portfolio over 10 years the difference is $92,455 or almost 100% of the initial portfolio ($100,000 at 5.7% per year is $174,080, and at 10.3% is $266,535).

If value always beats growth, why isn't everybody a value investor?

Investors tend to follow human nature and look for investing shortcuts, excitement coming from growth and promises of outsized returns. Value investing, on the other hand, is inherently boring, all you need to look at is the price to book value and usually only boring dull companies have low price to book values, there aren't many

exciting growth prospects but there is a margin of safety in the related book value of the underlying assets and stable earnings.

The problem is that growth works fine as long as there is an uptrend in the economic cycle, but as soon as there is a recession, the growth stops, and many of those companies that were promising great things, suddenly find themselves with no opportunity for further capital injections and go bankrupt. On the other hand, value stocks can always rely on the assets owned and can weather any economic storm. Over the long term, value lowers risk and that is all that matters in investing, not promises.

How to improve value investing and just price to book value?

Fama and French didn't look at anything else except for a stock's price-to-book value. However, I firmly believe that returns from value investing as well as Fama and French's analysis would be even better if investors avoid sectors where there will clearly be no more value in the future. A perfect example is Berkshire Hathaway. Buffet bought the textile mill that once was Berkshire Hathaway because it was cheap in the 1960s, but eventually closed all the textile operations by the 1980s and as funny as it might sound now, Berkshire was one of Buffett's worst investments because it cost him more capital than what it returned in time. Nevertheless, the things he bought through Berkshire thankfully made the difference.

So, if you manage to avoid declining sectors where much of the book value will end up impaired, I firmly believe that it is possible to further increase the difference between the returns of a value portfolio and a growth portfolio over a business cycle. The only thing one must do is to apply common sense and buy tangible values that will remain valuable whatever happens in the economy or even appreciate more in case of higher inflation.

Therefore, if you tend towards believing almost 100 years' worth of stock market data rather than the latest investment fad, you are a value investor. The factors that create market anomalies and distort the efficient market hypothesis are usually of psychological nature. The economic field that studies how people act irrationally when it comes to investing and finances is behavioral finance.

Value investing is the best strategy for both professional and part time investors

A value investing approach is difficult because it is often opposite from the latest investment fad and from what everybody else is doing. However, as Nobel Prize winner Eugene Fama has described with his

research, value investing leads to higher returns over time. When combined with a margin of safety approach, value investing beats all other investment strategies.

The best part of it is that anyone can apply it because if you can't find an investment that satisfies the value criteria you simply don't invest, and when you find one you can invest in peace because the risk of capital loss is minimal due to the margin of safety. Therefore, even a part time investor can benefit from this strategy. However, you have to be reminded that the strategy will mostly be out of favor from the mainstream investing community.

Value investment philosophy – mostly out of favor

"Individual and institutional investors alike frequently demonstrate an inability to make long-term investment decisions based on business fundamentals." Seth Klarman

As we have already mentioned, growth investing is exciting and easily attracts the majority of investors on promises of quick riches. This is bad for most investors and great for value investors as it creates market inefficiencies and allows the value investor to take advantage of them. If most investors would be value investors, it would be practically impossible to find a bargain. Consequently, a value investor has to be at peace with being a contrarian most of the time. Even if value investing has led to extreme returns over time, the majority of investors still prefer other investment strategies.

A common phrase that you will hear during bull markets is that value investing is dead. This is the current attitude towards value investing as most run after tech stocks and passively managed index funds. It was also the case in the 1990s when everybody was chasing dot-com stocks. We all know how that adventure ended. In the 1980s, Wall Street was focused on corporate takeovers and leveraged buyouts where valuations didn't matter at all. In the 1960s, the Nifty Fifty stocks had huge price-to-earnings ratios that many believed rightful due to amazing future growth and past performance while in 1929 the stock market was believed to have reached a permanently high plateau. In those and many other circumstances, value investing is usually proclaimed dead as a rising tide lifts all boats. All those hot strategies fade when the tide shifts while value investing has shown through numerous historical tests to be everlasting. However, you will have to go through certain periods in time where your neighbor or even your brother-in-law enjoys significantly stronger returns. The best way to deal with that is to focus on absolute and not relative

returns.

Relative and absolute performance

Most investors and consequently fund managers have adopted a relative performance orientation where it's important to beat the market, while whether the market is at a loss or gain is less important.

One group of investors, value investors, take an absolute performance orientation where they don't care about what the market is doing. What they care about is how their investment returns and risks correlate with their investment goals.

Another problem with relative performance is that it is a self-fulfilling prophecy, which grows for a long time but usually crashes in an instant. As everyone is just trying to beat the market in the short term, their idea of the best thing to do is to follow the market with minor adjustments, hoping to outperform it. When a fund manager applies a strategy that might have a negative short-term return in relation to the market's return but promises higher longer term returns with less risk, the temporary underperformance causes the funds' clients to withdraw their money and the manger to lose his job. Therefore, on Wall Street everybody is simply doing what everybody else is doing because that is the safest thing to do career wise.

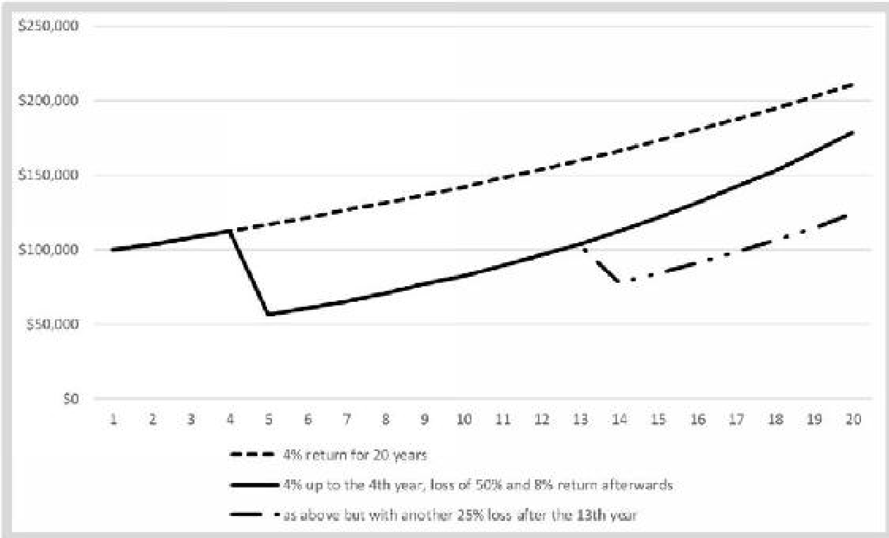
However, at some point in time the slowly-built mindless house of cards eventually crashes as most suddenly understand they have been chasing a ghost which is relative performance. By holding to a well-diversified portfolio where every investment has a margin of safety and is properly uncorrelated, a value investor might underperform for short periods of time but will definitely outperform over long periods of time and especially during a bear market. The smaller loss during a bear market is the biggest factor in the long-term return difference between a growth or fad investor and a value investor. Let me show you an example.

Example – the impact of heavy rare losses on long term returns

A $100,000 portfolio compounded at 4% for 20 years would return $210,650. An excellent return when compared to current treasury

yields or bank deposits. However, what nobody likes to think about is that stocks always carry a potential loss of 50%. If a recession comes along and the market declines by 50%, like it did in 2000 and 2008, and even if after the recession which let's say happens in the 4th year of the 20 year period, investment returns increase to 8% per year. After 20 years the cumulative return will be only $178,413. If we add another year with a 25% loss, let's say in the 13th year out of the 20, the cumulative return comes down to just $123,898, despite the 8% yearly return from the fifth year onwards.

Figure 9 Return on a portfolio with no declines, with one 50% decline and with another 25% decline



Source: Author’s analysis

This is the main point of value investing, by avoiding heavy losses during negative market periods that always happen even if in a bull market nobody thinks anything bad can happen, a value investor manages to achieve extraordinary returns over time. What further helps one understand him or herself on the path to becoming a better investor and market behavior is behavioral finance.

Understanding behavioral finance

“Las Vegas is busy every day, so we know that not everyone is rational.” Charles Ellis

Behavioral finance is a relatively new field in finance as it slowly gained popularity since Kahneman and Tversky published their seminal work “Prospect Theory: An Analysis of Decision under Risk”[4] in 1979 where they connected psychology to finance that consequently made the fallacies of the Efficient market hypothesis too obvious.

The basis of behavioral finance is that people do not behave rationally when it comes to their finances. However, rationality is the basis of the Efficient market hypothesis. Among many behavioral finance topics, the above-mentioned prospect theory and loss aversion are the most famous.

The prospect theory states that gains and losses are valued differently as investors base their decisions on perceived gains and not on perceived losses.

For example, two investment advisors pitch the same fund to an investor. The first advisor tells the investor how the fund had an average return of 10% over the last three years. The second advisor tells the investor that the fund had above average returns over the past decade, but the returns have been declining over the past few years. According to the prospect theory, the majority of investors would buy from the first advisor because he doesn’t mention losses or declines even if it is the case that both funds are the same.

The prospect theory is the reason why so many people buy high only to sell low in a market panic. By prospecting the recent past into the future, investors feel confident in their purchase even if from a rational perspective, the higher the stock price is, the lower will be their return. In a stock market decline, investors again prospect the recent decline into the future and sell to prevent more losses.

As for loss aversion, psychological studies[5] have shown that a loss hurts twice as much as a gain of the same amount makes us happy. As people hate losing money much more than they enjoy making money, loss aversion is what leads to panic sales because investors sell in fear that the stock market will fall more, thus in fear of losing even more money. Selling low is the worst thing an investor can do but the selling stampedes usually lead to bargain hunting territory for the value investor.

There are many more market anomaly examples but that would go beyond the purpose of this book. To make things easy, just look at the people around you that have a stock portfolio or some other kind of investments and ask yourself whether those people have the knowledge and the mindset to make rational financial decisions all the time and make proper risk reward calculations.

You have probably arrived at the conclusion that most of the people you know don’t have the necessary knowledge to make rational investing decisions. Well, all those people are the market, because each one of us owns a little piece of the global equity world, be it directly or through investment funds. As the majority of us does not behave rationally when it comes to making financial decisions, the whole market can consequently be defined as irrational.

Chapter 3

Defining risk, the value investing way

"Unfortunately, the more complex the system, the greater the room for error."

George Soros

What is investing risk?

"With so much attention being paid to the upside, it is easy to lose sight of the risk." Seth Klarman

The first thing a value investor thinks about when investing is not the expected return, but the risk of an investment. By focusing on keeping the risk minimal, you can really find investments that have low or even no risk and offer extremely positive returns. Usually, the lower the risk, the higher the return. This is probably completely opposite to what you learned in school, but as we already discussed, markets are not efficient and thus neither is risk. Before digging deeper into value investing it is essential to perfectly understand what risk actually is, because what the market understands as risk is not actually risk, it's just volatility. And volatility is a friend of the value investor.

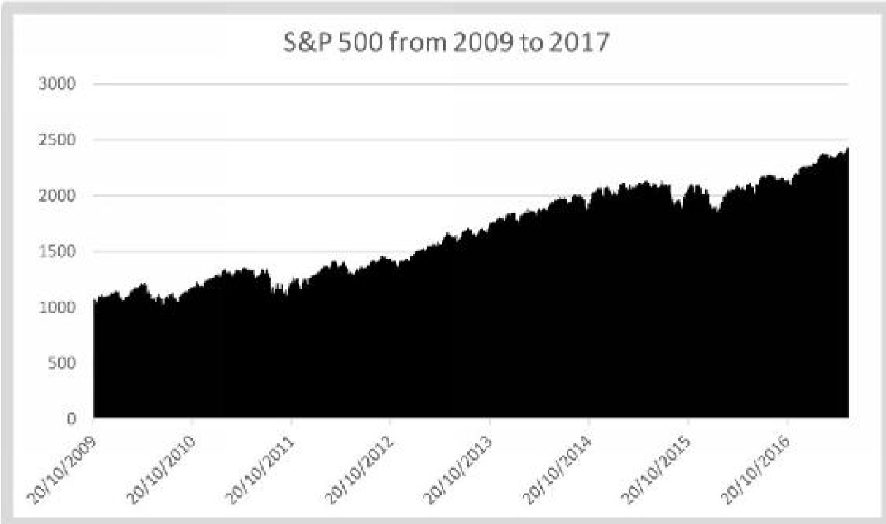
The most popular definition of risk – volatility measured by standard deviation

99% of the financial establishment defines risk as the chance an investment’s actual return will differ from the expected return. That risk is measured with standard deviation where a high standard deviation indicates a high degree of risk and vice versa. The standard deviation comes from looking at the stock price's past movements compared to how the general stock market moved.

Two often used risk models, such as the Beta Coefficient and the Value at Risk, are based on standard deviation. Both models use past data to determine future risks and then give you a probability for profit and loss.

The issue with such models is that you can easily manipulate data to present the assets as less risky. Let me show you on an example of the S&P 500.

Figure 10 The S&P 500 looks extremely stable and with minimum risk from 2010 to 2017

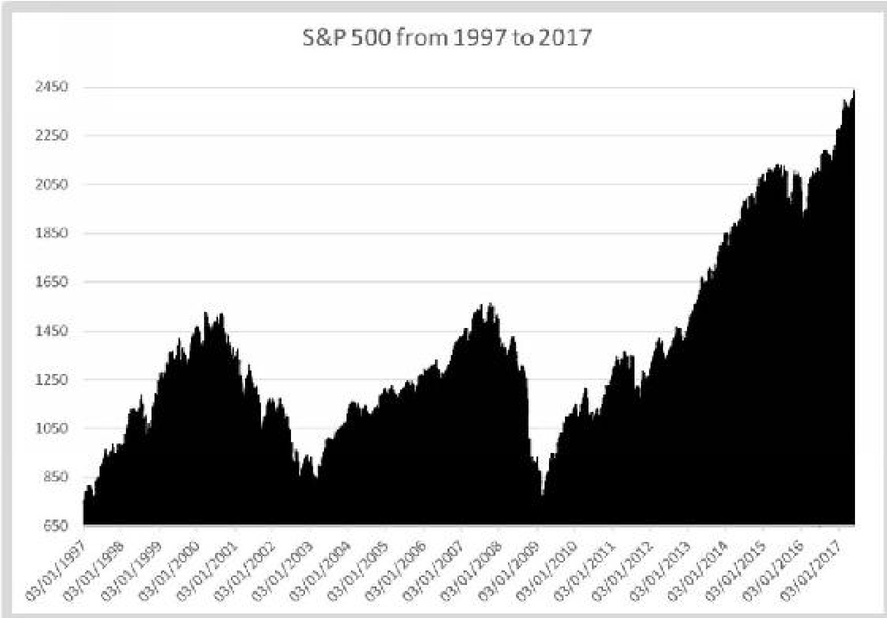


Source: Author's data

If I asses the risk of investing in the S&P 500 through its standard deviation from 2010 to 2017, the risk of investing in the index is minimal as the standard deviation was very low. In addition, it looks like a great opportunity as it seems the S&P 500 can only go up while the downturns are minimal and of short duration. This simplification grasps the concepts used for assessing the risks of dotcom stocks in the 1990s and subprime mortgages before the Great Recession because there were no historical precedents.

However, by looking at the S&P 500 from a 20-year perspective we can see that the S&P 500 has enough historical precedents and that the standard deviation is much larger.

Figure 11 The S&P 500 doesn't look stable at all from 1997 to 2017



Source: Author's data

From a longer-term perspective, the potential loss from investing in the S&P 500 in 2017 is more than 70%. Most investors prefer the shorter-term analysis of risk while the longer term is mostly left to boring value investors. But remember that value investors have outperformed the market in 84 out of the last 90 years.

The above leads to another concept related to risk that many don't rightly understand. In the financial world and academia, the concept taken for granted is that the higher the risk is, the higher is the potential return is and vice versa. I find the concept completely flawed because firstly, I don't estimate risk through volatility (standard deviation) and secondly, when the risks are highest according to standard deviation models, it seems that they are in fact the *lowest* because there is no other way for stocks to go other than up. What determines your return is never risk but something much simpler; price.

If the S&P 500 falls by 40% from its current level (2600 points as I am writing this), most market participants would start screaming

about how the market is risky because of the increased volatility and uncertainty which increase standard deviation. A value investor, however, would see the market as simply much cheaper than it was and would expect higher returns in the future as stocks have a lower starting point while their businesses in the long term will operate equally. Additionally, a lower S&P 500 means that the potential loss is lower, i.e. the risk.

This leads us to a concept of risk not used in academia and mainstream finance but that always occurs in discussions from those who have beaten the market for extremely long periods (Buffett, Munger, Graham, Klarman, Lynch…). A value investor defines risk as the probability of permanent capital loss. To put it on a personal level, risk is best defined by the probability of us not reaching our financial goals. If you don't reach your financial retirement goals at the age of 65, you will not think about how you invested in low volatility and therefore the return was low, you will be desperate and look at the times in your life where you took too much risk for small returns.

Therefore, risk is best described as how much can you lose with a certain investment. The definition is as simple as that, but it can't be used by Wall Street as every financial asset will definitely fall 70% or more once here and there. If anyone on Wall Street were to tell that to their clients, the financial industry would perhaps be just 1% of what it is now because nobody would buy investment vehicles if the focus would be on the risks and not on the returns.

How much can I lose in the long term? Risk according to fundamentals

A different approach to risk would have you look at the long-term performance of a business, and compare its long-term earnings to its current price, market environment, and outlook to tell whether the business will face structural headwinds and what the risk is of permanent capital loss. Additionally, analyzing every detail of the business to determine an intrinsic value is the key to value investing. Furthermore, buying a stock at a large discount (margin of safety) to that intrinsic value helps even more. This is why the most important

measure of risk for a value investor is the price he is paying in relation to the value he is buying. That's it. The lower the price is, the lower the risk is. What happened in the stock market in the last month or year has nothing to do with the risk of an investment.

Let's continue using the S&P 500 for an example of this; the best returns in the last 10 years have been achieved by those who invested at the worst period: late 2008 and early 2009. At that time, stocks were considered the riskiest investment due to future uncertainties and high volatility, however stocks were also extremely cheap due to their low valuations. More about valuations, long term earnings averages, margins of safety, intrinsic values and the technical aspect of risk in the second part of this book.

Think about your approach to stocks the next time a correction or a bear market comes along. If you are willing to buy the S&P 500 at above 2,600 points, I imagine you would be even happier to buy it at 1,600 because it would be cheaper, and you would get more for your money. Unfortunately for the masses, and fortunately for those who understand how the market works, very few people think this way because of the incorrect concept of risk they have. It will be extremely difficult to change that concept as its roots are deep in the academic world which later translates into the practical world where the same flawed models are used over and over again. Nevertheless, as long as it stays that way, value investors will always have an advantage and outperform other investing strategies.

Black Swans and risk

Another concept of risk that can't be included in a model, is a black swan. This concept was popularized by Nassim Taleb in his book "Fooled by Randomness" where he describes a black swan as a rare event that has an extreme impact and retrospective, but not prospective predictability.

To name a few examples of a black swan one could mention a default of the U.S., unforeseen consequences coming from a halt in global trade that leads to a global recession, or simply hyperinflation.

At this moment in time, nobody is contemplating hyperinflation, therefore it would be a black swan event. A black swan is difficult to predict. The impact is significant, and in hindsight, the occurrence of for example, hyperinflation would be easily explained as a result of loose monetary policies around the world.

When a black swan comes along, all the assumptions that keep the financial world stable fall and new assumptions are created, with huge repercussions on asset prices. The funny thing is that black swans happen all the time. Recent examples of a black swan are the dotcom crash, and the fall of Lehman Brothers. These examples are both easily explained in hindsight, but the large majority of the financial world didn't see them coming at the time.

I don't know what kind of black swan awaits us in the future, but I am sure there is one in the making and it can't be predicted by standard risk measures. The only thing a value investor can do is to find protection by buying assets with a margin of safety and actual value in relation to the price paid, no matter the changes in the economic environment.

A value investing definition of risk

"Basically, we try to buy value expressed in the differential between its price and what we think its worth." Walter Schloss

A value investor defines risk as the probability and the potential amount of loss and therefore the risk of an investment is the probability of an adverse outcome. In order to understand the risk of our investment we would need to know the outcome of it. This includes knowing what will happen in the future which is something nobody has ever efficiently managed to do.

Unfortunately, there is no number to use that describes risk. An investment that does well is later called low risk while an investment that ends up badly is called risky. But, even if everything ends up as planned, we can't know if the investment was risky or not. Therefore, risk remains a perception each one of us has about a specific investment.

Even though there is no way we can determine risk, there are however three things that can be done to at least counteract risk. These include adequate diversification where one is prepared for anything (more about that in the all-weather portfolio part). Secondly, a value investor hedges his positions when appropriate and when not expensive (more about that in the hedging part). Thirdly and most importantly, a value investor invests with a margin of safety which means that whatever happens the risk of permanent capital loss is minimal.

Take advantage of volatility, i.e. risk

Temporary price fluctuations shouldn't be considered as risk but as opportunities. If the price of a stock declines, many consider it risky, however, in many cases the fundamentals of the business don't deteriorate at all or deteriorate much less than the stock price as we

will see later with the Pfizer stock example. Such a scenario is a perfect example of how a stock that is considered risky by the market can simply become less risky for the value investor.

It's impossible to avoid market volatility, but what we have to avoid is overpaying for our investments and try to avoid stocks of companies that are seeing deteriorating fundamentals in sectors where the outlook isn't positive. If you buy companies that offer good value at a discounted price, your risk is low because in the long term, the value will ultimately be reflected in the price.

Seth Klarman in his book Margin of Safety, introduces us to a concept that few understand: a declining stock price can increase your long-term returns. Let's say you buy Company X at a price of $10 and a dividend yield of 5%. If next year the price drops to $5 while the fundamentals stay intact and you reinvest your dividend at that low price, your ultimate returns are much higher than if the stock price would have remained stable.

Figure 12 How a declining stock price can increase investment returns

Initial investment	Scenario A - Stable stock price		
$10,000.00	2017	2018	2019
Stock price	$10.00	$10.00	$10.00
Begin of year number of stocks	1,000	1050	1102.5
Dividend per stock	$0.5	$0.5	$0.5
Total reinvested dividend	$500.0	$525.0	$551.3
End of year value	$10,500.00	11025	11576.3
End of year number of stocks	1050	1102.5	1157.63
Total return			16%

Initial investment	Scenario B - Volatile stock price		
$10,000.00	2017	2018	2019
Stock price	$10.00	$5.00	$10.00
Begin of year number of stocks	1000	1050	1155
Dividend per stock	$0.5	$0.5	$0.5
Total reinvested dividend	$500.0	$525.0	$577.5
End of year value	10500	5775	12127.5
End of year number of stocks	1050	1155	1212.75
Total return			21%

Source: Author's calculation based on Seth Klarman's insight

In the above example, the 50% stock price decline has actually increased the total return after 3 years by 31%. This insight is so inherently simple to understand from a technical perspective but extremely difficult to apply from a behavioral perspective. Nobody likes to see declining stock prices even if this means higher long term returns. Nevertheless, if the next time a stock price drops, you are happy because it will allow you to buy more and increase your long term returns, you can pat yourself as it will be the day you have mastered value investing.

On a social note, current stock prices are extremely high. This might look good and many are euphoric but this also means that the dividends your pension fund is reinvesting and your monthly

contributions can buy less than what would be the case if stocks were cheaper. Unfortunately, even if it is counterintuitive, the current high stock prices will lead to lower future wealth for most market participants.

Positive asymmetrical risk reward is the ultimate investing goal

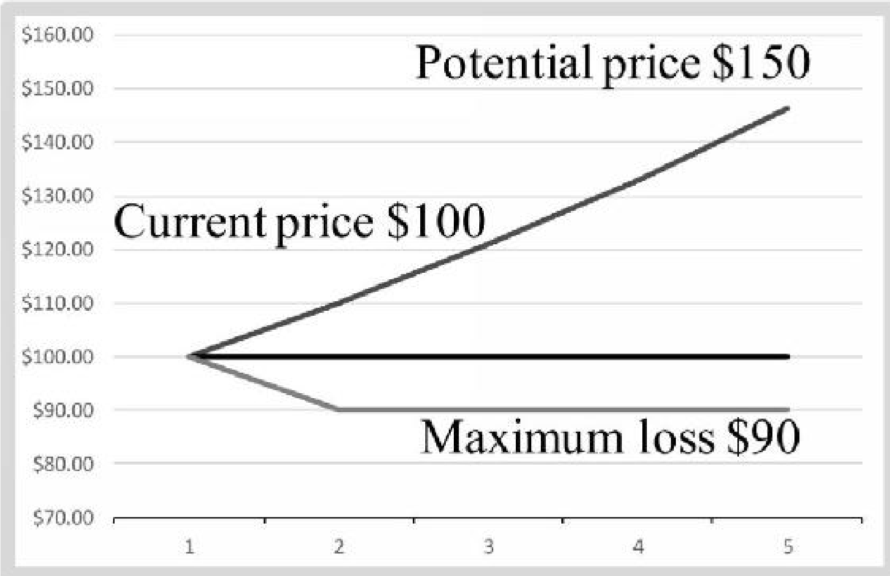
The final concept to understand related to risk is asymmetrical risk reward. Understanding this allows for long term outsized investment rewards.

Asymmetrical risk reward is the essence of investing in stocks, and is also essential for those who want to beat the market. An asymmetrical risk reward situation can be both positive and negative. A positive one is where you can only lose an amount that is smaller than the potential reward for the same probability.

A negative risk reward situation is one where you can lose more than what the potential positive reward is.

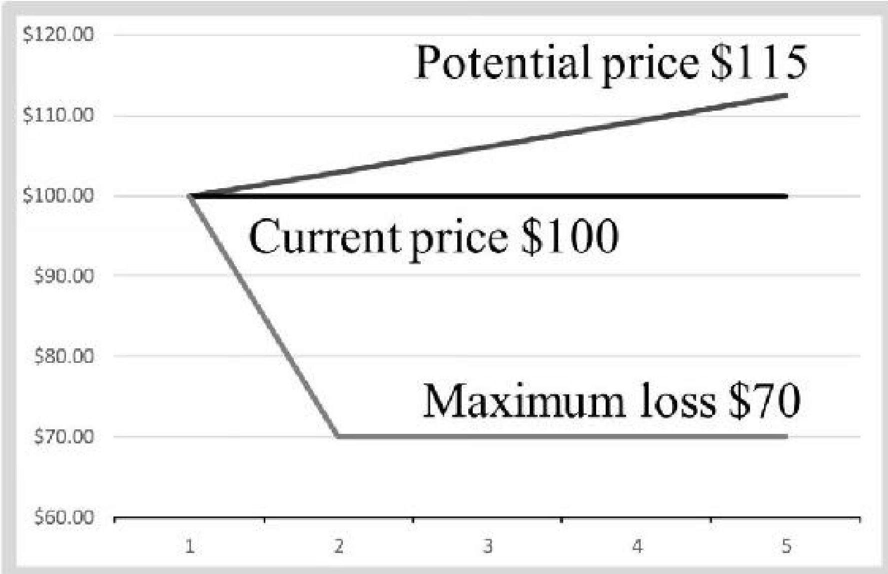
By patiently filling your portfolio with positive asymmetric risk reward investments you will reach extremely high returns for little risk, which is the point of value investing.

Figure 13 Positive asymmetrical risk reward situation



Source: Author's insight

Figure 14 Negative asymmetrical risk reward situation



Source: Author's insight

The problem or opportunity in financial markets is that investors usually focus on returns rather than on risk. This is more pronounced during bull markets because it's in our human nature to forget bad experiences in favor of only remembering the positive ones. As the last bear market was more than 8 years ago, many have completely stopped looking at risks and have focused their efforts on returns when investing. This is why you will often hear discussions and come across scenario elaborations about yields, returns, dividends, coupons etc., but you will rarely come across scenario elaborations that analyze risks in detail.

By focusing on the risks first and only if the risks are small then on returns, you can find asymmetric risk reward situations that will enable you to maximize your returns and minimize your risks.

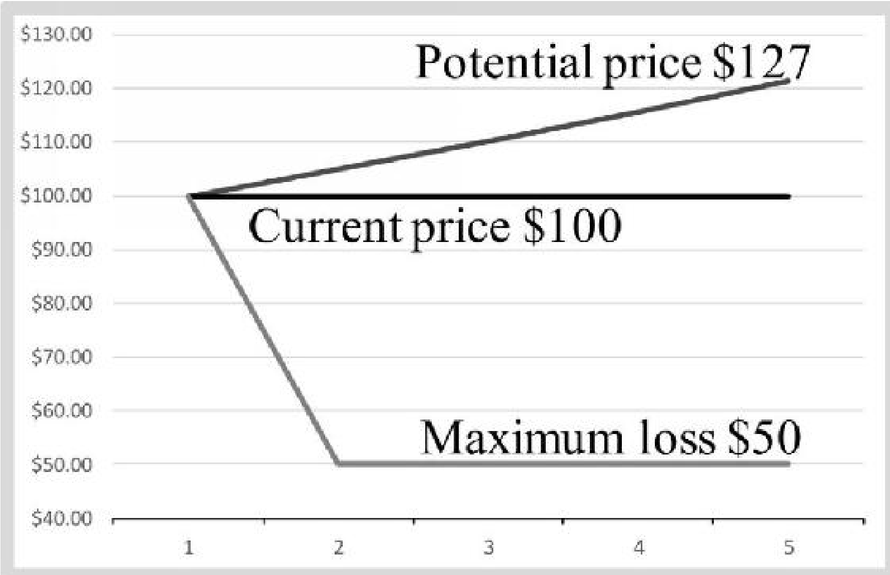
Current market risk reward example

I want to give an example of the current risk reward situation the market offers (end 2017) that might be obsolete whey you read this book but will be an excellent learning example.

Here's a simple calculation to make: stocks on aggregate will give you a return that is in line with their earnings and economic growth. The current S&P 500 price to earnings ratio is around 25, which gives an earnings yield of 4%. With the economy expected to grow at a rate between 1% and 3%, those earnings aren't going to grow much in the future. Therefore, we can say that stocks will give a 5% annual long-term return.

On the risk side, after 8 years of economic expansion there is a large probability for a recession in the next 5 years. Let's say that there is a 50% chance of a recession in the next 5 years. Therefore, there is a 50% chance of getting the 5% expected yearly return from stocks and a 50% chance of seeing stocks fall by 50% as it was the case in the last two recessions. This means that for every $100, index investors are risking $50 for a potential return of $27 (5% cumulative return on $100 in five years).

Figure 15 Current market risk reward analysis shows a negative situation



Source: Author's insight

The negative asymmetry in the market's risk isn't perceived by market participants but will probably lead to bad surprises in the future that will again create excellent opportunities for value investors.

How to apply positive risk reward asymmetry to your portfolio

This is much easier said than done, but given that you can invest all around the world in thousands of companies, you also have the opportunity to discover investments that have limited downside risks and huge upside potential. Indicators that limit risk can be fundamental or even qualitative. Fundamental risk indicators are the book value, stable cash flow, cash per share and others that limit the downside while the high potential earnings increase the upside.

A qualitative factor to look at is growth. A company that has a high probability of long term sustainable growth due to positive industry circumstances, macro or demographic trends, will potentially deliver

much higher returns than companies with relatively high debt burdens constrained by a slow growing economy like as is the case for many constituents of the S&P 500.

The final investing secret is simple. The more stocks you analyze, the more positive asymmetric risk reward situations you will find. From my experience I can tell you that the investing world isn't an elusive environment where extremely smart people constantly perfectly price assets. It is a small world where only a handful of analysts follow a stock. Thus, stock prices, especially of small companies are often extremely inefficiently priced where even an amateur investor armed with a bit of patience can find excellent investments.

On the other hand, even with 15 minutes a day it is possible to achieve extreme returns by following only a handful of large stocks. The point then is to buy when the earnings return is satisfying and do nothing when those stocks are overpriced. In the long term, such a strategy will lead to outsized returns with low risk creating a lifelong positive asymmetric risk reward portfolio.

Chapter 4

Modernizing value investing

"If you want to have a better performance than the crowd, you must do things differently from the crowd"

John Templeton

Expanding value investing mindset

"All taxes discourage something. Why not discourage bad things like pollution rather than good things like working or investment?" Lawrence Summers

At first, value investing was about finding accounting bargains and buying them whenever there was a discount. Almost a century has passed since Graham polished the value investing strategy and things have changed. However, Graham's principles still stand but value investing can be expanded with concepts that have been developed over the last century that also lower one's risk and increase the returns. This chapter discusses taxes, stock price movements, optimism, the theory of reflexivity, corporate governance and Wall Street.

Don't be afraid to pay taxes

Nobody likes to pay taxes, but as Benjamin Disraeli would say: "There are only two certainties in life, death and taxes". Depending on where you live and the account structure you have, the taxation is different. For example, in the Netherlands there is no capital gains tax but you have to pay a flat tax of 1.25% per year on your capital, no matter what you do with it. This might sound like a great deal, but if you average 6% returns per year and you have to pay a 20% capital gains tax on your gains, you fare better than you would with the Dutch flat rate as you would pay only 1.1% of your portfolio in taxes.

What is important from a capital gains tax perspective for a value investor is not to be afraid to pay taxes. If you bought a stock at $100 because it was a bargain and the year later the stock goes up to $200, your net gain with a 20% capital gain tax would be $80. Now, some of you wouldn't sell to keep the $20 in your portfolio and enjoy the dividends coming from the ownership. However, the opportunity cost of not selling might be much bigger than the $20 you would have to

pay in taxes.

Firstly, the stock isn't a bargain anymore at $200 and could easily drop to $180 or $150, and if you bought it at $100 you probably wouldn't buy the stock at $200. Secondly, there might be other bargains out there that the market hasn't yet recognized and keeping the first stock just to save $20 might make you lose $100 or $80 after taxes, on another stock. Investors that live in a jurisdiction with a capital gain tax have to calculate the tax cost into their strategy in order to know exactly why they are buying and when and why will they sell.

It is extremely important to be knowledgeable about the taxation system related to investments in the country you live. Your broker can surely help you with that so give him a call. If it is an online broker, harass them on their chat line until they give you all the information you need to know to make proper investment decisions related to taxation.

Distinguish between stock price fluctuations and underlying business reality

The easiest way to explain the difference between the stock market and underlying business reality is by asking one simple question; are you going to eat tomorrow or charge your phone? You are probably going to do both things no matter what happens in the stock market. It is crucial to understand that whatever happens in the stock market, the large majority of people are just going to continue living as they have been living and this will be reflected on most businesses' revenues and earnings in the long term.

A perfect example of how stock prices get sometimes detached from reality is the behavior of Pfizer's (NYSE: PFE) stock price in comparison to its earnings during the 2009 financial crisis. Pfizer is one of the largest pharmaceutical companies in the world and no matter what happens in the economy or stock market people are always going to use their medicines. Perhaps headache drugs will sell even better in a bear market but that is a different story. Therefore, it is not logical that Pfizer's stock price reacts to economic crises or stock

market panics. However, in a stock market panic, most investors just sell everything, no matter the stability of the business or its correlation to economic trends.

Figure 16 Pfizer’s stock price dropped 53% during the financial crisis

Source: Author’s data

Soon after the crisis Pfizer’s stock price was back to pre-crisis levels. Thus, those who managed to distinguish between the market’s irrational panic and real business circumstances made a killing from buying Pfizer at cheap prices as PFE’s earnings were extremely stable in the period.

The market constantly offers excellent investment opportunities to those who can see the difference between the market’s erratic behavior and business fundamentals. In the Pfizer example, the market was clearly too pessimistic, but it also often becomes overly optimistic.

Figure 17 Pfizer's earnings showed extreme stability from 2007 to 2012

	2007-12	2008-12	2009-12	2010-12	2011-12
Revenue USD Mil	$48,418	$48,296	$50,009	$65,165	$61,035
Gross Margin %	76.8	83.2	82.2	77.3	79.5
Operating Income USD Mil	$7,519	$9,694	$10,827	$9,471	$12,706
Operating Margin %	15.5	20.1	21.7	14.5	20.8
Net Income USD Mil	$8,144	$8,104	$8,635	$8,257	$10,009
Earnings Per Share USD	$1.17	$1.20	$1.23	$1.02	$1.27

Source: Morningstar

Recognizing when a company is undervalued is one thing, taking action while all others are panicking is a totally different thing. For doing that, first of all you need lots of knowledge to be sure about the value you identified, even if it is against what the majority thinks. Secondly, you have to be an optimist, thus trust that the human race will prevail. My goal with this book is to help you as much in the technical as in the psychological part of value investing.

Being an optimist is essential for investing

In investing, being an optimist doesn't mean to euphorically cheer for a stock to go up. It means believing that the stock market will provide decent returns and allow for those returns to compound over time. The fact is that evolution has wired us humans to think exclusively; either something is bad or it is good. Think about it, you either like someone or you don't. When you have an unpleasant argument with somebody at work or a family member you feel lots of negative emotions towards that person at that point in time. However, when you look at your long-term relationship, that outburst of negativity might by just one minute in a thousand days of love and peace. Such behavior comes from our inheritance of "fight or flight" thinking, due to the necessity to think fast when faced with dangerous

environmental situations over the last two million years. However, this kind of primate thinking mechanism isn't the best one to use when investing.

Much like in personal relationships, people look at the stock market as a place where stocks go up or down. When invested, most investors are certain stocks will go up. They don't understand the notion of a probabilistic approach to investing where anything can happen.

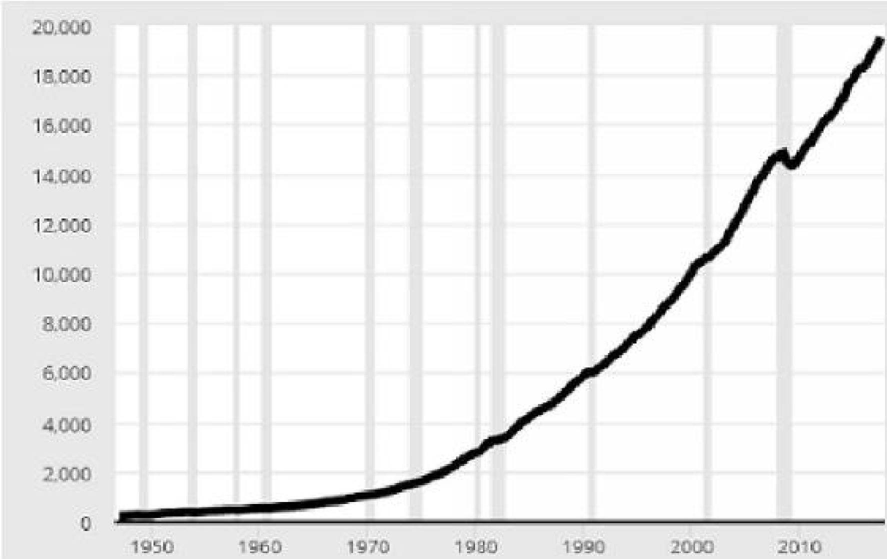
When an eventual bear market arrives, suddenly the large majority of investors starts to believe it is the end of the financial world as we know it. Precisely at that point, value investors have to be optimistic and buy the value screaming at them even if the herd is blinded by the short-term stock market drop.

The economic nature is to behave in cycles. This is due to the fact that we as individuals also behave in cycles. When things are going well, we tend to overspend. Higher confidence in the economy leads us to put higher debt loads on ourselves, which often leads to spending more than what we earn. A similar pattern affects both governments and corporations.

Such behavior isn't sustainable for a longer term and at some point in time, deleveraging is necessary. This is usually when the economy enters a recession. After a while (thanks to the government's monetary interventions and lower temporary spending), credit scores and savings improve, and a new cycle can begin that will lead the economy to an even higher level than where is previously was.

This has happened over and over again and will continue to happen in the future. However, it is important to know that recessions are always minor pauses on the amazing growth trend that is the economy.

Figure 18 U.S. GDP with recession periods in gray



Source: Federal Reserve Bank of St. Louis

The prior chart sends a clear message: Recessions are minor blips on the long-term trend of growth and development that is a common attribute of the human race. Keep that in mind next time the stock market crashes.

The theory of reflexivity and value investing

"The stock price can at times significantly influence the value of a business. Investors must not lose sight of this possibility." Seth Klarman

Behavioral finance analyzes how market participants are often irrational. This is what creates the basis for profitable value investing. If everyone would be rational there would be no bargains to buy.

The theory of reflexivity, developed by one of the greatest traders of all time, George Soros, who has one of the best long-term investing track records, even better than Buffett's, goes one step further and analyzes how irrational financial markets can also have a reflexive effect on the fundamentals of the company or even of the market, something a value investor must be very aware of.

For example, if a stock falls for some irrational reason, such as a short attack, the created market panic and negative environment can make creditors withdraw their credit line which can consequently negatively affect the actual fundamentals of the company. Thus, a value investor has to be aware of the reflexivity the stock market has on business fundamentals because it explains a lot of the inexplicable cases of irrational behavior, margin of safety failures and value investing losses. On the other hand, understanding reflexivity can give you the extra patience to just wait a bit longer before buying, or before selling, and further increase your returns. The important pillars of the theory of reflexivity are our fallibility, self-reinforcing and self-correcting trends in a boom bust cycle and reflexivity.

One of the biggest issues today is that economists and policy makers focus on equilibrium, certainty and stability. Just think of the FED's goal: stable growth and low unemployment. Nice as that sounds, that is something impossible to realize and has never been achieved in history because uncertainty is the key feature in human affairs. Reflexivity's key concept is uncertainty, which is opposite to

what economic theory has been preaching in the last century. Just take a look at the U.S. unemployment level, it has never been stable. It either goes up or down.

Figure 19 U.S. unemployment from 1946

Source: FRED

An even more unstable environment is financial markets with stock prices that go constantly all over the place. Such volatility is the result of the fact that our thinking and actions reflect onto market prices and consequently fundamentals in the first place, and because our thinking is not perfect, thus fallible.

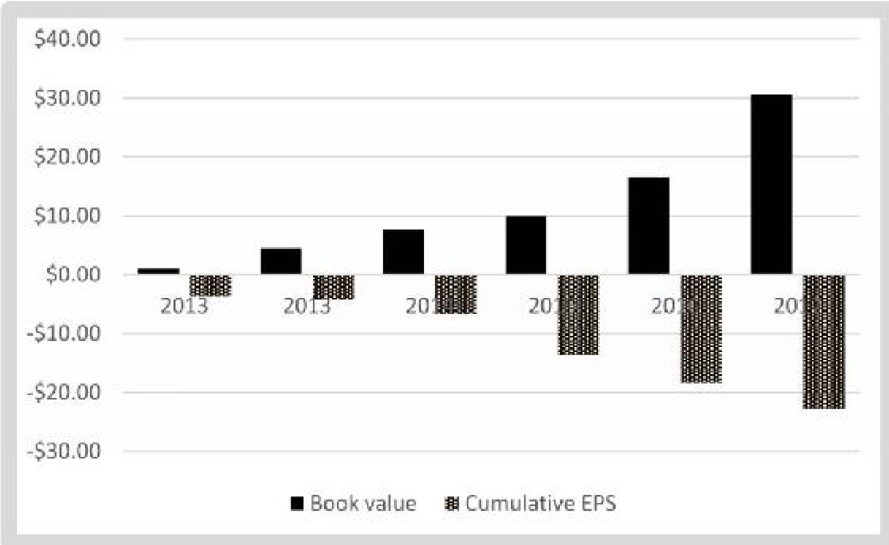
The theory of reflexivity is based on the fact that situations have thinking participants and that those participants' view of the world is always partial and distorted which is the principle of fallibility. The problem is that those distorted views influence the situation to which they relate because false views lead to wrong actions, i.e. the principle of reflexivity.

For example, parents that constantly tell their kid that he is a bad boy will probably end up with a very bad boy because he will really start to believe that he is in fact a bad boy. Thus, the distorted thinking eventually affects the fundamentals.

A great example of how the stock price can affect the value of fundamentals is the story of Tesla Inc. from 2012 to 2017. The company's profits were negative the whole period but the book value

of the stock kept increasing year by year.

Figure 20 Tesla's book value and cumulative earnings per share from 2012 to Q3 2017



Source: Morningstar

The fact that TSLA didn't have a single profitable quarter from 2010 to 2017 but managed to increase the book value per share 10-fold during that period through new capital raising rounds explains how the stock price can have an effect on fundamentals, in this case a positive effect.

The reflexivity effect on book value, be it positive or negative is extremely important for the value investor. The point is that even if something looks like an extreme bargain, the low stock price can really push creditors from lending or force the company to raise capital in extremely dilutive scenarios that can significantly negatively affect the initial presumed value and margin of safety in an investment. This strengthens the notion that each value investment has to be approached in stages to lower risk and increase the understanding of what is going on with a stock and a company, especially if it is a falling knife, i.e. a stock whose price has significantly declined and is still declining.

Fallibility and investing

The concept of fallibility is strictly related to reflexivity. It says that the world is too complex for us to comprehend. Thus, all our conclusions are definitely distorted because we constantly resort to various methods of simplification, be it generalization, metaphors, history etc. We can easily say that our understanding of the world we live in is inherently imperfect.

Investing is a process that has thinking participants. The participants' thinking serves two functions, one is to understand the environment and the other is to act in that environment in the participants' advantage. Thus, we have a passive, cognitive function that allows us to understand the environment and an active, manipulative function that makes us act.

The logical thing is that you see the world, gather data and then act on it. Reflexivity adds a step onto it where your thinking and actions also affect the world you are viewing, thus the world is always uncertain and unstable, and your thinking is fallible.

Consider a statement like "It is raining". This statement can be only true or false depending on what is actually going on outside. However, a statement like "cryptocurrencies are revolutionary" is a reflexive statement as whether it is true or not depends on the effect the statement will have on the world.

The easiest way to understand reflexivity is through feedback loops. The participants' views influence the course of events, and the course of events influences the participants' views and such a state constantly moves in circles.

This influence can be positive, which drives the participants' views and the events further apart and negative, which brings the two closer together, thus self-correcting. A positive or negative feedback loop creates a self-reinforcing cycle.

The important thing is that the cycle cannot go on forever as the participants' views would become so far removed from reality that at one point the participants would recognize their views as unrealistic and start a self-correcting trend. However, the positive or negative feedback have also an effect on the actual event, thus all is reflected.

It all leads towards dynamic disequilibrium.

The self-reinforcing trends lead to boom-bust processes or bubbles on financial markets. What is important to understand is that misinterpretations and misconceptions can play a very important role in human affairs. Are we sure that the current FED members are correctly interpreting how the financial system works? Additionally, are we sure that how the FED thinks now and affects financial markets is the best way?

The above leads towards uncertainty and is something that we have to live by when investing. As we make decisions based on our imperfect understanding of the world, it is logical that the results of our actions will not correspond with our expectations.

It is very helpful with investing and especially with value investing to understand the notion that our reasoning around a stock will probably be wrong. Therefore, a value investor has to seek as many margin of safety factors that allow for fallible analysis so that even if your estimated value proves wrong, you still don't lose money. However, even if acting in an uncertain environment is the key to investing, the more you know the lower is the uncertainty. Unfortunately, the uncertainty part of investing can never be totally removed.

Reflexivity and financial markets

The basis of the theory of reflexivity is that market prices always distort the underlying fundamentals where the distortion can be small or significant. Secondly, financial markets can affect the fundamentals they are supposed to reflect. This is where reflexivity goes one step beyond behavioral finance as behavioral finance focuses on the mispricing of assets and not on how that mispricing may affect the fundamentals.

The most common way that market prices affect fundamentals is the use of leverage, be it in debt or equity form. When a stock price of a company rises, then the equity becomes more valuable and a company can take advantage to make acquisitions or to borrow at lower costs. Both situations also improve the fundamentals and make

the cycle self-reinforcing. When the stock price is low, creditors think that there is something negative going on with the company, are not willing to lend more to the company and the company's fundamentals deteriorate.

Applying the theory of reflexivity within value investing

The theory of reflexivity is very interesting and a great way to explain what is going on in current markets. However, you are probably interested in how to make money and in how Soros made money by using this theory. To make money you have to find the climax or reversal point of a self-reinforcing cycle at which the cycle becomes self-reinforcing in the opposite direction.

A boom bust process is set in motion when a trend and a misconception positively reinforce each other. Now, what we must do is test the trend with negative feedback. If the trend is strong enough to survive the test, both the trend and the misconception will be further reinforced.

That being said, at some point it gets clear that a misconception is involved, and a twilight period ensues during which doubts grow and more people lose faith but the trend is sustained by inertia. After the twilight period, the trend will reverse and the problems will usually surface. Soros also describes bubbles as asymmetric in shape with a long boom that is slow to start, accelerating gradually and reinforced by successful tests, until it flattens during the twilight period. The bust is always short and steep as investors enter panic mode.

The length and strength of each stage is unpredictable, but there is an internal logic to the sequence of stages. So, the sequence is predictable, but even that can be terminated by government intervention like quantitative easing.

The best way to explain reflexivity through an example is to use real estate. Real estate enters a bubble when credit becomes cheap and easily available, as it is now. Banks look at higher real estate prices and are willing to give more credit. Their fallacy is that they don't see the connection between credit availability and rising collateral values. The banks think collateral values are independent

from increased credit. Cheap credit leads to higher prices and better credit scores which relax borrowing standards.

If you apply the theory of reflexivity, you will rush to buy when you see a bubble forming because the trend is usually self-reinforcing, and you will rush to sell when there is much twilight. Thus, you cannot expect the market to adjust itself based on fundamentals, as looking at fundamentals is not the way to make money in the short term.

I wanted to discuss behavioral finance and reflexivity here because I often see value investors get completely infatuated with fundamentals that look extremely valuable and consequently the stock is undervalued but the stock market never catches up. Actually, the opposite is true; the fundamentals often catch up with the stock, be it upwards or downwards. Thus, reflexivity should be another check to perform before approaching an investment.

Shareholder value creation and destruction – earnings, buybacks – corporate management

"Literally, half of the board is dozing off. The other half is reading the Wall Street Journal. And they put slides up a lot and nobody can understand the slides and when it gets dark they all doze off." Carl Icahn

In addition to mentioning the market's risk reward puzzle I want to dig deeper into other issues plaguing the corporate environment that are not recognized by the market but will have huge consequences over time and for those who don't adjust their investment portfolios.

There's a huge problem affecting the corporate environment that few see because most people think in positives and negatives, and can't think on a relative scale. What do I mean by this? Well, when shareholders judge management, they look at whether the bottom line is positive and in line with what the competition is doing. Nobody is assessing whether it could have been much better.

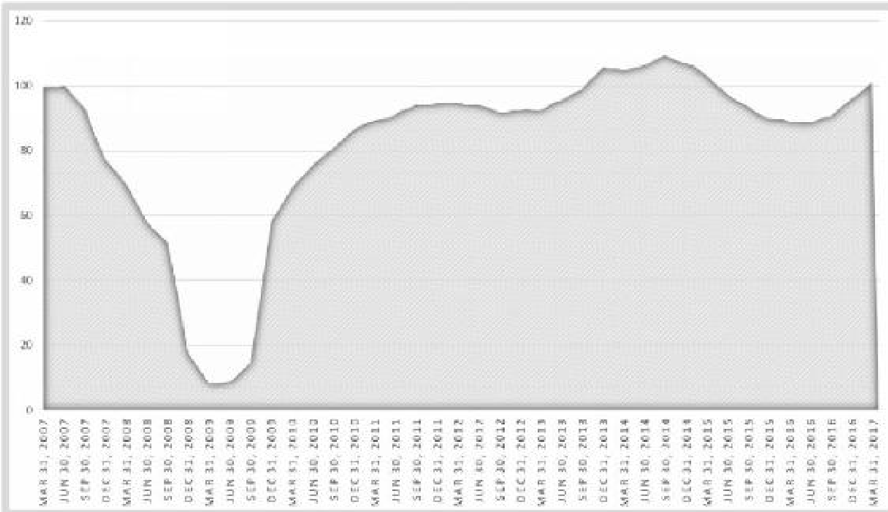
We expect only the best from our favorite athletes and we hope our children develop to their full potential but when it comes to corporate management, we remain mostly silent and accept whatever is thrown at us. As most stocks are owned by index and pension funds that own just a bit of each company, corporate managers don't really have tight controls on them and as long as things go relatively well there is no problem for them. However, the misalignment of the managements' interests with the investors' interests will lead to huge future turmoil.

Earnings have gone nowhere in the last 10 years

Complacency isn't good, and it certainly isn't in the spirit of being the best at something. For me, yes, it's important that the earnings number is 90 and not -10, but it's equally important that the earnings number could have been 190, and not just 90. A look at the S&P 500

earnings chart from 2007 to 2017 will describe what I mean.

Figure 21 S&P 500 earnings from 2007 to 2017



Source: Multpl

From 2007 to 2017, the aggregate earnings of the largest 500 corporations in the world didn't grow at all despite the historically low interest rates and global economic growth.

Additionally, the S&P 500 constantly changes in relation to the constituents' market capitalizations. Since we know that market capitalization is strongly related to earnings, companies operating positively get included in the index and those operating poorly get excluded. By keeping the same companies in the index for 10 years, the above chart would look even worse.

If we know that the U.S. economy has grown by 17% from 2007 to 2017, that the global economy has grown even more and that interest rates have been at historical lows, how come corporate America hasn't grown its earnings? Well, they've been focused on only one thing; the stock price and not organic business growth.

The focus is on the stock price

"Bottoms in the investment world don't end with four-year lows; they end with 10 or 15-year lows" Jim Rogers

You might think that a higher stock price is good. This is correct only if you are a seller. The large majority of investors aren't sellers but accumulators of stocks. You try to accumulate as much as possible during a long time to enjoy a nice retirement. As the S&P 500 is just going up and up while earnings remain flat, most investors are just paying more for the same thing. Think of your pension fund, a higher stock price isn't at all positive for you because new contributions mean you own a smaller part of whatever the fund is buying.

Corporate management pushes stock prices up through dividends and buybacks. The problem is that most buybacks destroy value. (a buyback or share repurchase is when a corporation buys its owns shares on the market in order to retire them and lower the number of shares outstanding, which should lead to higher earnings per share)

Firstly, corporations spend more on buybacks and dividends than what they earn. This means that management willingly takes on debt to pay dividends and do buybacks. Both activities lower shareholders' value.

From 2007 to 2017, S&P 500 corporations have spent $7.16 trillion on buybacks and dividends while total earnings were $6.8 trillion. This means companies are taking on debt to invest in growth and to keep dividends and buybacks higher than earnings. As we all know, debt provides instant gratification but is detrimental in the long term as you have to pay interest on it. And if you spend all of your money on dividends and buybacks, where is the growth going to come from? As shown in the previous figure, corporate earnings haven't really been growing in the last 10 years.

Secondly, the biggest sin is that buybacks are made no matter the book value of the repurchased stock. Buybacks are extremely positive

if you are buying back stocks that trade below their intrinsic book value. For example; let's say that in order to buy land, find a contractor and build a house, you need $1 million. Let's say the house next door was just built and is selling for $600,000. You would probably rush to buy it and not build your own. Now, if the same house next door is selling for $3 million, you wouldn't buy it. You would build your own house for a million and, when its built, you'd have a house with a market value of $3 million. Logical, right?

The above example is the exact opposite of what most of the corporate management has been doing. They are buying the $3 million house with shareholders' money instead of building new houses.

At the moment of writing, the average price to book value of the S&P 500 is 3.29 which means that every time a company does a buyback is destroys shareholder value.

Figure 22 Example of how buybacks destroy value

BUYBACK AT HIGH PRICE TO BOOK		AFTER BUYBACK
Stock price	$329	$329
Book value	$100	$75
Number of shares	1000	900
Total equity	$100,000	$67,100
Market cap.	$329,000	$296,100
Buyback	100 shares	
Cost of buyback	$32,900	

Source: Author's insights

The above example shows what happens to the book value if a company buys back its own shares at a price to book value of 3.29. The book value in the above case has been lowered by 25% even if the company bought back just 10% of shares. A lower book value means that over the long term there will be less money for investments, growth, future earnings, dividends etc. Therefore, as a value investor you should always try to find companies that do buybacks only when the stock price is trading below book value. This does the opposite of what we just saw, and immediately increases shareholder value. Buybacks at a higher price than book value might temporarily increase earnings and give the perception of value creation but that isn't actually so.

A research done by professors Robert Ayres and Michael Olenick from INSEAD goes so far as to call the current corporate buyback activities corporate suicide. There is also a scientific explanation of how the more a company spends on buybacks, the less likely are they to grow in the future.

Figure 23 The higher the percentage of buybacks in relation to market capitalization, the lower the 5-year market capitalization growth rate is

Source: INSEAD – Olenick & Ayres

The way corporate management behaves isn't in the best long-term interest of shareholders. This means that many future retirees will have a much lower quality of life than what they could have had. Corporate managers are mostly compensated in relation to the performance of the stock and thus they will continue to indulge in expensive buybacks that lead to them receiving higher bonuses and more options despite the fact that it destroys value.

What makes me angry and sad is that we aren't talking just about investment returns here, we're talking about people, their health, their dreams, and in general, the emotional and social state of a nation. By destroying the value of the businesses we own, 'we' as mutual fund and pension holders, long term investors or corporate management, are doing a huge disservice to our future selves. It's time for their focus to shift from short term rewards in the form of higher stock prices to real value creation, i.e. higher book values and higher earnings.

Warren Buffett didn't follow the internet craze in the 1990s when

most condemned him as old-fashioned, and he is *definitely* not following the current buyback mania. As Buffett is against buybacks that are above 120% of book value, we have a similar situation to the 1990s where Buffett is considered old-fashioned while corporations indulge in low debt and high stock prices. I wonder what long term investment returns will tell.

(NOTE: buybacks can create shareholder value in certain circumstances when the price is below book value or the earnings yield is above the long term cost of capital)

Beware of fees and Wall Street's interests

"Wall Street is the only place where that people ride to in a Rolls Royce to get advice from those who take the subway." Warren Buffett

When you add the fees and Wall Street's interest on top of the managements' selfish interest, there isn't much left for an investor. This is one of the reasons the average investor achieves much lower returns than the market. According to J.P. Morgan's 2017 market overview the average investor has achieved annual returns of 2.3% in the period from 1997 up to 2017 while the market returned 7.5%.

The main focus of Wall Street are firstly their fees, bonuses and compensation packages and only then your long-term value. Fortunately for investors, due to intense competition, fees have significantly declined in the last 20 years but nevertheless they are still an important factor for investment returns and you should always know where the interest of the middleman you are using lies.

The main issue with Wall Street is that people there get paid for *what* they do and not for how effectively they do it. Fees aren't inherently bad, but we must be aware of the motivation of the people we do business with. Nevertheless, I hope that one day we will have a structure of Wall Street based on long term performance fees.

Wall Street Favors Underwritings Over Secondary-Market Transactions

Apart from trading and management fees which are fortunately declining, the underwriting business is still a wild environment. Just as an example, in May 2016 Goldman Sachs upgraded Tesla (NASDAQ: TSLA) and increased its stock price recommendation just hours before it announced that it will be one of the leading book runners on a new $2 billion secondary share offering. Soon after

getting the commission on the underwriting, Goldman was quick to downgrade TSLA on Model 3 concerns and the Solar City acquisition that they themselves helped fund with equity raises.

Underwriting fees are why IPOs are always made to look extremely exciting. We can see that in Tesla's case, the discount at which the underwriter was able to purchase shares with was an astonishing 6.5%. If you participate in an IPO, the fee you pay to the brokerage is extremely high, usually between 2% and 8%.

Before investing in IPOs the value investor should always ask himself what the motivation is behind the issue because more often than not IPOs are offerings where hopes and dreams are capitalized at high multiples. With interest rates at historical lows, I find it difficult to believe that the companies filing for IPOs have lots of prospects but are short of capital. With Wall Street going after fees and founders wanting to cash in on their work, it seems that IPOs aren't always made in our best interest.

Wall Street's Short-Term Focus and Financial Innovations

It is also important to warn investors about financial middlemen who focus only on earning their fees and who jump from one deal to the other. The short-term focus leads to a constant array of new and exciting better-than-ever securities.

Financial market innovations give Wall Street fixed fees with no risk. Well, no risk, only if they aren't so greedy to trade their own credit default swaps like they did prior to the 2009 financial crisis. Like in the 1980s, when the market was flooded with various kinds of debt securities, today's market is flooded with various kinds of ETFs.

The initial success of the first ETFs has led to new kinds of ETFs and consequently, more and more complicated ETFs are created. An ETF is like a mutual fund but you can trade it as a stock. Problems will arise in the future when some ETFs will have to unload their assets but no one on the real market will want them due to their inherent risks and low liquidity.

I will conclude this part of the book by quoting Seth Klarman:

“What appears to be new and improved today may prove to be flawed or even fallacious tomorrow.”

The fact is that Wall Street is never satisfied with success, it will always look toward the next commission or deal that will make even more money. Unfortunately for long term investors, such an attitude makes them cope with huge losses every few years while Wall Street just looks ahead for the next fee.

Therefore, be very aware that your investment goals are aligned with the ones of your financial advisor.

The second part of the book is more focused on the technical part of value investing and how to analyze businesses from a value investing perspective.

BOOK 2

Technical value investing

This part of the book will dig deep into the technical part of value investing which consists of:

- Determining the intrinsic value of a stock
- Determining the stock's margin of safety in order to limit your risks
- Understanding the catalysts that will unlock the value
- Avoiding value traps
- Trying to buy at the largest possible discount in comparison to the intrinsic value.

Throughout the chapter I will share various tools that can be used to determine intrinsic values, margins of safety and discounts, but also tools that help in avoiding value traps and help to take advantage of market irrationalities.

The point behind the 25 discussed tools is that no business valuation is precise. To put it in a better way, all valuations are and will always be wrong because in finance, there are too many moving factors in addition to the required subjectivity when making analyses, for valuations to ever be accurate. However, it is better to be vaguely right than precisely wrong. The point is to limit the probabilities of being wrong by increasing the margin of safety.

It is important to clarify that the investing environment has significantly changed since Benjamin Graham mostly used statistics to find undervalued companies or since Warren Buffett had been buying wonderful businesses at fair prices. Nevertheless, the discussed set of value investing tools will always be crucial for any serious long-term investor because value investing is first focused on limiting risk. Some tools will seem obsolete in the current online business environment but will always serve well for a comparative analysis or for specific investments. Other tools like, for example, including growth as a key to value, perfectly fit the modern value investor.

This part synthesizes, describes, explains and discusses the most important tools for value investors. In the next part I also apply all the mentioned tools on a real example to show how this works in practice.

Chapter 5

The art of business valuation

"Price is what you pay.

Value is what you get"

Warren Buffett

Valuation can't be precise

"It is better to be vaguely right than precisely wrong". Misattributed to John Maynard Keynes but originally from Carveth Read

Some think the market, being efficient, always tells the exact value of a business. However, history has shown that this same market values businesses extremely irrationally, either on the upside or on the downside. Knowing how to properly value a business gives you the perfect investing edge as it allows to disregard what the market thinks and turn that into an advantage by exploiting market mispricing. However, don't expect precision, this is also what makes value investing relatively easy, you just need to compare the current stock price to your range of values. If the stock price isn't significantly below your calculated average values, you look for other opportunities. I also think that this is exactly why value investing is always shunned by the majority of investors; it takes a lot of time to do research and for more than 90% of the promising cases, the first purchasing price is way below the stock price. However, the advantage that diligent research and systematization offers, is what leads to higher returns with less risk.

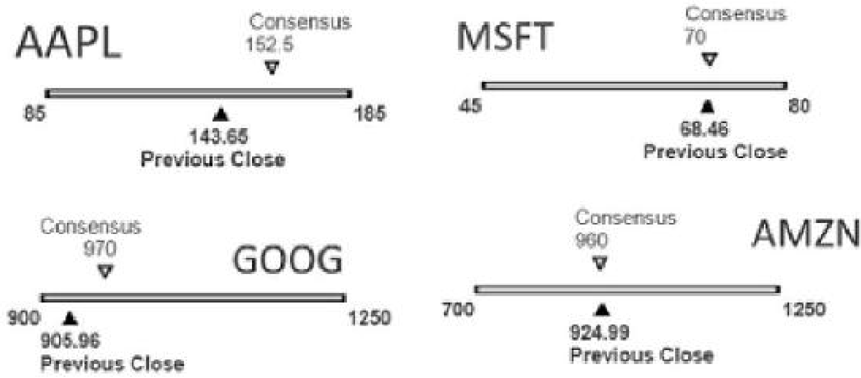
Successful investing is simple. There is no need for complicated mathematical formulas, or, as Buffett would say: "Stay away from anything that has a Greek letter in it". These days, all you need to be a value investor is common sense, willingness to do lots of research and a computer. Let's look at the tools.

TOOL #1 Using a range of values for investment decision making

Many beautiful mathematical models use a plethora of past data to estimate future cash flows, discount those cash flows to a present value, and provide a target stock price. The problem is that the assumptions included in such valuation models constantly change. Therefore, it's impossible to have a static number as a precise valuation figure because interest rates, currency rates, valuations, stock market premiums, market sentiment and practically everything related to financial markets is constantly on the move. For example, a small change in interest rates usually has a huge impact on bond values and consequently on all stock valuation models.

We should never aim for precision in our valuation efforts, but merely for accuracy. As much as mathematical models seem precise, more often than not, a back of a napkin calculation is worth more than hundreds of spreadsheets of data. A simple example of how difficult it is to value a company comes from the fact that Wall Street analysts, who have all the data available and are paid to research stocks full-time, always give a wide range of estimates. The below figure shows the target price divergence among various Wall Street analysts for Apple, Microsoft, Alphabet and Amazon.

Figure 24 The variations in analysts' targets are often extreme



Source: Nasdaq

The differences in opinion on what the value of a company is, are staggering. However, without differences in opinion, there wouldn't be a need for financial markets as a trade occurs when an asset is more valuable than the paid price to the buyer and less valuable than the received price to the seller.

I bet that if you check the analysts' estimates on the above-mentioned stocks as you are reading this book, which you can easily do by visiting Nasdaq's web page and clicking on 'Analysts research', all estimates will probably be significantly different from the above estimates made in May 2017. This further shows how difficult it is to value a business, especially when looking at longer term values.

By using the tools described in this book you will get to a range of values that will offer different perspectives on an investment. The key to value investing is to buy when the current price is below your most pessimistic intrinsic value estimation. Then you are really buying a bargain with a margin of safety. By having a long term perspective, which gives more stability when calculating actual business values, a value investor can take advantage of the market irrationality which is strongly influenced by the unprecise analysts' research.

Finding a perfect value investment that will fit all the criteria will

perhaps happen only a few times in your life. Therefore, all the values received by using the value investing tools mentioned will be best used in comparative analyses in order for you to find the best stocks for a portfolio that fits your risk reward appetite.

However, in the words of Benjamin Graham: Never forget that "Value should scream at you!" Whenever the stock price is below whatever intrinsic value you can come up with by using various tools you know, you have a bargain. When that happens, bet the farm. We continue by describing the four basic methods of value analysis.

Four steps for determining value

“The dominant factors affecting control valuations are earning power (past and prospective) and asset values.” Warren Buffett

To outperform the market, one must buy when the seller is wrong. Thus, buy at a discount, which again leads to the art of business valuation as the only option for finding discounts. I’ll describe here four methods for business valuation as an introduction to the chapter. The four methods are: net present value analysis (NPV), liquidation value, the stock market value and the value to the private owner. The four, in addition to calculating intrinsic value, probably constitute the best way to value a company. Note that each method has its strengths and weaknesses. No specific method provides accurate values all the time, and each specific investment will require specific tools. However, the range of values gained from the various methods will provide an excellent basis for investment decision making and comparison.

TOOL #2 Net present value calculation (NPV)

The net present value is the discounted value of all future cash flows a business is expected to generate. The difficult part comes when estimating future cash flows and determining a discount rate. One can also use earnings instead of future cash flows because over the long term, earnings are correlated to the actual value the business creates and its cash flows. Nevertheless, whether future cash flows will be distributed to shareholders or reinvested remains at the management's discretion.

As predicting the future is impossible, it boils down to accurate guessing. The best way to create a valuable net present value analysis is to be conservative when estimating future cash flows. Being conservative in one's estimations immediately creates a margin of safety and limits subjectivity. The best way to explain the influence of personal feelings like optimism and pessimism on a stock valuation is by using Tesla's stock as an example.

An optimist would assume all projects—solar panels, energy storage batteries, and all kinds of electric vehicles—will work out fine and dominate the respective industry. In such a scenario, Tesla's future revenue would easily be in the hundreds of billions and the company would become the new Apple when it comes to market capitalization. Such a perspective would clearly justify the current (2017) market valuation of over $50 billion. On the other hand, a conservative estimation would look at Tesla's debt and then estimate what would happen if a recession slows down vehicle sales and the solar panel systems don't reach profitability. In such a scenario, Tesla would probably go bankrupt and therefore there is too much risk when investing in such a company from a value investing perspective. Value investing is about being conservative and really limiting the possibility of permanent capital loss.

Let's dig into the technical part of calculating the net present value. This requires determining a discount rate in relation to the risk of the analyzed investments. For example, investing in miners is risky because a lot of things can go wrong when developing and operating a

mine from technical, political, natural, and labor issues just to mention a few. Therefore, the mining industry will always carry a high discount rate and when using a discount rate, a proper value investor should go as high as 20% to calculate the NPV. On the other hand, if things go right, the technical reports from mine projects give an accurate estimation of future cash flows.

For investments like blue chip companies or businesses with a moat, a lower discount rate can be used, and the general way to do that is to add a stock risk premium to the 10-year Treasury yield. As the Treasury yield can be considered riskless, by adding a few percentage points, you get to a good expected return from stocks. The average equity premium has been between 1.2% (1999) and 6.45% (1979). Again, to be conservative it is better to use the higher end of that range.

The formula for the calculation of the present value of a future cash flow is the following:

$$PV = FV/(1+i)t$$

Where PV is the present value of the future cashflow, FV or future value is the actual future estimated cash flow, i is the discount rate while t is the future period.

The net present value (NPV) is calculated by subtracting the sum of present values derived from the estimated future cash flows from the current stock price.

NPV = present value of future cash flows minus stock price

In the following imaginary example, I will first estimate that future cash flows (or earnings), grow at a rate of 7% per year and calculate the NPV with a 5% discount rate.

Table 1 - NPV of investments using 10-year cash flows growing at 7% per year with a 5% discount rate (no final value for simplicity)

t-year	1	2	3	4	5	6	7	8	9	10
Cash flows	$100.00	$107.00	$114.49	$122.50	$131.08	$140.26	$150.07	$160.58	$171.82	$183.85
i-discuont rate	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
PV	$95.24	$97.05	$98.90	$100.78	$102.70	$104.66	$106.65	$108.69	$110.76	$112.87
SUM PV	$1,038	PRICE	$800	NPV	$238					

Source: Author's calculation

The PV of the investment is $1038 while the stock price is $800. This leads to a positive NPV value of $238 which suggests the investment is good given the used discount rate. There is a formula for the calculation of the present value for perpetual earnings growth but as a value investor, you want to invest in relatively certain things and not future promises. However, the perpetual earnings growth formula is the following.

$$PV = \text{current cash flow} / (i - g)$$

Where PV is the present value of the future cash flows, i is the discount rate and g is the growth rate. As the intelligent investor assumes at least two recessions in a 10-year period, which severely affect the cash flows used in the estimations, the value of a simple formula like the present value of constantly growing cash flows is questionable.

For simplicity reasons I have excluded the final value of the investment in the final year of the net present value calculation. However, depending on the methodology you find best for your investing style, you can add a final value (estimated stock price) to the cash flow in the final year of the calculation. This will give a higher present value.

Another important factor when calculating the net present value is the number of future periods to include in the calculation. There is no point in going too much into the future as due to the discounting, very distant future values become irrelevant. However, the shorter the period you use is, the larger the margin of safety you have. I find 10 years as a good period to use in order to calculate the present values

for future cash flows and see whatever happens afterwards as just a potential investing bonus. The 10-year period makes the calculations easier and keeps the analysis conservative. Going to 20 years will make the calculations less conservative but probably more accurate.

It is important to note that estimating next year's earnings is already extremely difficult let alone 10-year or even 20-year earnings. However, the more stability the business offers, through having a strong business moat and high profitability, the lower the discount rate can be and the longer the estimated period. For a risky emerging market company, I would use a 10-year period while for a blue chip stock with a large business moat, I would go to 20 years as the lower discount rate justifies a longer period.

So, the received values will vary enormously depending on the discount rate and time period used. If you use always the same, you will get to excellent comparative values in relation to your risk reward appetite.

Let's change the assumptions where there will be no growth in earnings and the discount rate is now 10%.

Table 2 - NPV of investment using 10-year cash flows, no growth, with a 10% discount rate

t-year	1	2	3	4	5	6	7	8	9	10
Cash flows	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
i-discuont rate	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
PV	$90.91	$82.64	$75.13	$68.30	$62.09	$56.45	$51.32	$46.65	$42.41	$38.55
SUM PV	$614	PRICE	$800	NPV	-$186					

Source: Author’s calculation

The current sum of the present future cash flows is $614 that leads to a negative NPV of $185.54. The more conservative you are, the lower will your net present value be. The point of value investing is to invest only when the NPV is positive while the assumptions used are very conservative. Let’s imagine a third scenario without earnings growth, with a recession where earnings drop to zero and we keep the 10% discount rate as other investments offer such a return.

Table 3 - NPV of investment using 10-year cash flows with recession, no growth and a 10% discount rate

t-year	1	2	3	4	5	6	7	8	9	10
Cash flows	$100.00	$100.00	$50.00	$0.00	$50.00	$100.00	$100.00	$100.00	$100.00	$100.00
i-discuont rate	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
PV	$90.91	$82.64	$37.57	$0.00	$31.05	$56.45	$51.32	$46.65	$42.41	$38.55
SUM PV	$477	PRICE	$800	NPV	-$323					

Source: Author's calculation

The extremely conservative but often realistic present value calculation that includes a recession during which there is no profitability, leads to a PV of $477 which is significantly below the stock price. Given the long-term volatility of the stock market, you can expect the stock price of almost any stock to drop below the most conservative present value calculation as in a bear market investors panic, and sell with no regard or thought to value.

It is important to keep in mind that it is impossible to precisely estimate next year's earnings or cash flows and going further makes things just more complicated. Nevertheless, the value of the NPV exercise is necessary to put the available information into perspective, possibly using a table, where the investment opportunity can be followed, calculations can be adjusted, and then compared to other investments. By adding other tools, we will get to a comprehensive way to estimate intrinsic value.

As it is impossible to accurately project future earnings, an analysis of a business's current tangible values provides much more safety when investing. The best investment is one with a positive outlook for future earnings and a price below the current value of the tangible assets it owns. A tool that helps in finding such investments is liquidation value.

TOOL #3 Liquidation value

The liquidation value of a business is one where we estimate the net value of the tangible assets minus all of the liabilities. The liquidation value offers a very strong margin of safety as it analyzes what would be the value for shareholders if the company would stop being an ongoing concern.

The philosophy behind the liquidation methodology is that when a company is trading close to or below its liquidation value, it often makes a good investment. However, the liquidation value depends on whether it's a fire sale or whether the business is slowly winding down operations and perhaps even just selling business units separately. In addition, the sale value of the assets owned might depend on whether or not the inventory is a commodity or a specialized product. Huge discounts should be used for companies that have difficulties selling their main product as their inventory will probably be sold at extremely low prices, especially in a fire sale.

Applying the liquidation value methodology in the current market environment seems like an old-fashioned strategy because the market is extremely overvalued. The S&P 500 has a price to book value ratio of 3.1 which means that you can expect less than a third of what you are paying now for the stock if the net assets held were sold at book value. The 3.1 ratio doesn't even exclude intangible assets. For conservative reasons, it is best to exclude intangible assets from the calculation as those are mostly goodwill which usually shows how much a company overpaid for an acquisition. I am exaggerating a bit, but it is extremely difficult to find value in goodwill in case of a liquidation, sector weakness or recession.

Goodwill is an accounting gimmick that allows a company that has acquired another company to put the difference between the value of the assets it acquired and the price it paid on its balance sheet as goodwill. There is no real value in goodwill as it depends on how much the management paid when acquiring another company. As goodwill values are extremely high in bull markets and economic expansions but extremely low in recessions, a value investor doesn't

really look at goodwill as a margin of safety and prefers tangible assets. Nevertheless, if a company has strong and stable cash flows, its margin of safety might come from its intrinsic value even if there aren't many tangible assets on the balance sheet.

Book value is a metric that helps in determining liquidation value, but not all book values can be taken at face value. The book value of a company represents the accounting value of the company. It's very rare to find a company that has its book value equal to its liquidation value. For example, buildings are usually depreciated within 20 to 50 years. So, if a company bought a building 40 years ago, the value of that building on the balance sheet could easily be zero, but if the company would put the same building for sale, the value would probably be much higher than what the company paid for it four decades ago.

The main point in determining liquidation value in order to calculate a margin of safety price is to look beyond the numbers on the balance sheet and estimate the actual fair value of the assets owned by the company. The good thing is that debt can usually be taken at face value.

While we're on the subject of debt; a situation where the value investor has to be careful is when pension liabilities depend on how the company calculates future obligations and can't be precisely determined in advance. To increase the margin of safety, it's perhaps better to stay away from companies with large or potentially large pension liabilities. If a company expects to achieve a return of 7% per year in the next 20 years while the maximum expected return from a well-diversified portfolio at this moment in time is 3%, there are going to be lots of unpleasant surprises, both for the person expecting a nice pension and for the shareholders of such companies.

The liquidation value is the only real value related to investing as it translates all asset values to cash and settles the debate on what the correct price of a stock is once and for all, with a clear cash amount. However, it does not consider the value of future cash flows which is the most important part in business valuation, but does serve as a

good additional checking point when analyzing an investment.

It is proper to use the liquidation value method when estimating the value of a company that is plagued by bad news. Often a series of missed earnings expectations and negative market coverage can create an extremely oversold situation and a bargain stock price. If it is really impossible to determine future earnings, as long as there is a good chance those will be positive over the long term, determining the value of the assets the company owns helps to give you a worst-case scenario value. When the worst-case liquidation value is higher than the stock price, you have an investment with limited downside.

To determine the liquidation value, you have to:

- Calculate the fair value of the assets owned (probably discount them by 30% to 50% to cover for possible fire sales)
- Deduct the liabilities the company has
- Be very conservative when calculating the value of the assets. Intangible assets like goodwill can be immediately cancelled while it is important to check what is the fair value of various buildings, inventories, licenses, contracts the company owns.

The more you know about a company and how it has grown over time, the better your calculation of the liquidation value will be. On a positive tone, a company that has been using historical cost accounting and never revalued real estate properties could have a huge hidden value. Therefore, it is extremely important to estimate the real (or fair) value of the assets analyzed and look beyond the actual number on the balance sheet. Balance sheet numbers are an accounting measure, not a measure of value.

TOOL #4 Stock market price

It might be surprising, but a value investor occasionally relies on stock market values to determine intrinsic values. Keep in mind though, that this is only in specific cases where a unit of a business is valued by comparing it to similar businesses traded on the stock market or for the valuation of an investment company.

For example, a holding company that owns different businesses can be best valued by comparing single business units to comparable listed companies. This will give you a quick insight into what the actual value could be, especially for the short term as we know that the market's perception of value is usually wrong. Of course, one should only make a purchase when the current stock price is significantly below the comparative value in order to have a margin of safety.

As the goal of every investor is to reach satisfying returns by comparing companies and their values, a value investor can determine what is his possible return when and if the market recognizes the value of the undervalued stock or if other catalysts unlock it. That being said, never forget that each business is different and valuing all of the businesses in a sector with the same valuation is not the way to reach proper values.

TOOL #5 Look at what could be the value of the company for a private owner (takeover)

Many businesses are privately held and don't have a constantly moving stock price for their owners to look at. Such businesses are valued by what their value is to a private owner. Usually at an average industry valuation in relation to the cost of capital and return on capital the business has, plus or minus various brand values or risks. When analyzing any company, it is good to see, if possible, what prices similar businesses have been sold for in the past, but you also have to account for the differences between businesses. Two businesses that have the same revenues, but one has no debt while the other has no equity, will be valued very differently. The current state of the economy and interest rates must be assessed too.

Such an exercise gives a good approximation of the value that a third party would be willing to offer for the whole business. Walter Schloss, Benjamin Graham's student that managed to outperform the S&P 500 by more than 5 percentage points per year from 1955 to 2002, used to be the most famous user of such a technique. He would buy a good business at a price that is lower from what the value would be to a private owner and wait for as long as necessary for someone to purchase the business at a premium.

Merger and acquisition activity evolves in waves, in the late period of an economic cycle you can expect more activity as companies have significant cash amounts and are desperate for growth. If a business isn't too big, it can be a good complement to a bigger business, and we can expect it to be approached as a takeover target at least a few times over a decade. If there are significant synergies to be taken advantage of, even better.

By comparing the current stock price with what would be a possible takeover offer, one can increase the safety of an investment, as a takeover leads to the most important part of the investment cycle, which is cashing out.

Every sector is different when it comes to takeover pricing, some

sectors like social media will look at the number of users and the growth rate while groceries will look at profitability and sales. For example, Amazon paid $13.4 billion to buy Whole Foods that had $15.7 billion in yearly sales with a net income of 500 million in 2017 while Facebook paid $22 billion for WhatsApp that had only $10 million in revenue in 2013.

The best way to approach getting to such a value is to find 5 significant metrics for the sector and try to compare the company you are analyzing with a few acquisitions in that sector. Having done that, you can estimate a buyout value for a similar company. As always, the more conservative you are in your estimations, the larger your margin of safety is, but it will also be more difficult to find a bargain.

Intrinsic value

"The percentage change in book value in any given year is likely to be reasonably close to that year's change in intrinsic value." Warren Buffett

Warren Buffett defines intrinsic value as "the discounted value of the cash that can be taken out of a business during its remaining life," (Berkshire's annual report of 2013) and considers it the only logical approach to evaluating the relative attractiveness of investments and businesses. Intrinsic value might be considered the same as net present value but when discussing anything coming from Buffett, it is more about philosophy than technique. Therefore, intrinsic value deserves to be discussed as a separate tool because it also gives some preciseness in the variable art of business valuation and is much broader than net present value.

Even if determining a precise intrinsic value of a stock is impossible as it is impossible to predict the future, it is always worthy to engage in such an activity because the mere process of trying to calculate the intrinsic value of a stock will lead to a better understanding of the investment's risk and rewards. Additionally, if you always use the same methodology, the comparability of your intrinsic value calculations will add huge value to your investing decision process and help you compare margins of safety among investment options in various environments.

As an investor, you should care about the money you can get out of a business. If you are a restaurant owner, you don't care that much about the valuation of your restaurant, about the EBTIDA, ROI, ROC, and other metrics, but rather, what you care about most is what the earnings will be and how much cash you can take out of your business at year's end so that the business continues to thrive.

An investor that thinks like an owner cares mostly about the change in book value which comes from the current year's earnings

minus eventual dividends. If you have a similar perspective on stocks, seeing them as little parts of a business and not as something to quickly make money on, when you know you own a great business, you don't care about what the market has to say except for when the market goes into panic mode and allows you buy more of what you already own. However, due to the media and the attractiveness of watching stock prices go up and down on a daily basis, many quickly forget about intrinsic values and focus on target prices.

In the long term, market values eventually catch up with intrinsic values, be it on the upside or downside. What's essential is how much the book value increases each year and by how much the cash flows increase. The yearly change in book value is much more stable than the market's irrational valuation and it is the only precise indicator of intrinsic value, i.e. the yearly change in intrinsic value.

Berkshire Hathaway is the perfect example of how intrinsic value is closely correlated to the change in book value over time and how the change in book value is almost perfectly correlated to long term stock market returns. Those who looked at Berkshire's book value or intrinsic value probably took extreme advantage in the 11 years out of the last 52, when its market value declined even if the book value declined only twice in the last 52 years. On top of that, the long-term compounding rate of Berkshire's book value has been 19%, which is pretty close to the stock price performance that delivered 20.9% per year over the last 52 years. Given that we are currently in an exuberant market, it is highly probable that the stock market returns and book value growth will even out in time.

Table 4 Berkshire's market and book value changes

	ANNUAL PERCENTAGE CHANGE			ANNUAL PERCENTAGE CHANGE	
YEAR	in per share book value of BRK	in per share market value of BRK	YEAR	in per share book value of BRK	in per share market value of BRK
1965	23.8	49.5	1991	39.6	35.6
1966	20.3	-3.4	1992	20.3	29.8
1967	11.0	13.3	1993	14.3	38.9
1968	19.0	77.8	1994	13.9	25.0
1969	16.2	19.4	1995	43.1	57.4
1970	12.0	-4.6	1996	31.8	6.2
1971	16.4	80.5	1997	34.1	34.9
1972	21.7	8.1	1998	48.3	52.2
1973	4.7	-2.5	1999	0.5	-19.9
1974	5.5	-48.7	2000	6.5	26.6
1975	21.9	2.5	2001	-6.2	6.5
1976	59.3	129.3	2002	10.0	-3.8
1977	31.9	46.8	2003	21.0	15.8
1978	24.0	14.5	2004	10.5	4.3
1979	35.7	102.5	2005	6.4	0.8
1980	19.3	32.8	2006	18.4	24.1
1981	31.4	31.8	2007	11.0	28.7
1982	40.0	38.4	2008	-9.6	-31.8
1983	32.3	69.0	2009	19.8	2.7
1984	13.6	-2.7	2010	13.0	21.4
1985	48.2	93.7	2011	4.6	-4.7
1986	26.1	14.2	2012	14.4	16.8
1987	19.5	4.6	2013	18.2	32.7
1988	20.1	59.3	2014	8.3	27.0
1989	44.4	84.6	2015	6.4	-12.5
1990	7.4	-23.1	2016	10.7	23.4
Years with declines in grey			AVERAGE	19.0	20.8

Source: Berkshire Hathaway

TOOL #6 Measuring Intrinsic Value

The definition of intrinsic value is simple: It is the discounted value of the cash that can be taken out of a business during its remaining life. The cash available for distribution is calculated by using the following formula:

Cash available for distribution =

(reported earnings + depreciation and other non-cash charges)

-

(capitalized expenditures for the business to maintain its operations as is + additional working capital needed)

However, the only way to measure it properly is by looking at the change in the book value of the business adjusting for dividends or other capital transactions. As the change in book value shows only what happened in the past the best way to approach the analysis of intrinsic value is by combining the following three factors: book value, earnings and expected future return on retained earnings.

Value of past investments

The first component of intrinsic value is the value of the investments an organization has made. This can be seen by looking at its book value. If the sector is in trouble, some investments should be impaired or cautiously analyzed. The liability side of a balance sheet has to always be taken at face value while one has to be extremely conservative when analyzing the asset side. The biggest discount should be given to goodwill and intangible assets, followed by inventory values, receivables machinery and other illiquid assets. Cash and cash equivalents (assets that can be quickly exchanged for cash), should be the only assets taken at face value when calculating the book value of a stock with the goal of arriving at an intrinsic value with a margin of safety.

Intrinsic value is different from book value. Book value is easy to calculate and gives a limited perspective on the company as it doesn't tell anything about its future. But the change in book value in one

year tells you how much the intrinsic value of the business has changed in the current year as the current change isn't discounted. If the company has lots of investments accounted at cost while their current value is much higher, this should be reflected in the company's earnings which create the change in book value and are the second component of measuring intrinsic value.

Earnings

Earnings are the oxygen of a business and should be the metric for its evaluation. If you own a business and have no intention of selling it, the only thing you care about is how much money you made this year. The increase in earnings is exactly what reflects the change in book value and therefore is the only objective indicator of intrinsic value. The best way to assess earnings is to use their past averages and adjust them for growth and cyclicality. More about that in the next chapter about the Cyclically adjusted price earnings ratio and the growth part of the value equation.

Expected future return

The third component of intrinsic value is the expected future return on retained earnings which is the most subjective component of the three. A good approximation is to use the past returns on invested capital the management has achieved. The better the management, the higher the intrinsic value. As Charlie Munger and Warren Buffett state that the return on invested capital is one of the most important metrics to be used when analyzing investments, it deserves a separate chapter and a tool consideration as it must also be used as a separate investment metric.

TOOL #7 Return on invested capital (ROIC)

Charlie Munger is known for his simplistic view of the investing world that has one advantage over all other views; it works, and he has a longer than 50-year track record with a 19% annual return to back his statements. His view on investing is simple and can be synthetized by the following quote:

"It's obvious that if a company generates high returns on capital and reinvests at high returns, it will do well. But this wouldn't sell books, so there's a lot of twaddle and fuzzy concepts that have been introduced that don't add much."

Therefore, we have to see how to calculate returns on investing capital and how to use such a powerful tool when investing.

Return on invested capital shows how well the company is using its available capital. It is calculated by using the following formula:

ROIC = net income / capital (equity plus long and short-term debt)

You will see many versions of the above formula where some exclude taxes and interest expenses from net income or goodwill and excess cash etc. from capital but I find the above a very simple formula to use and a conservative one which can help in identifying intrinsic value and a margin of safety. Excluding taxes and interest rates assumes all companies operate in an equal environment which is not true while excluding goodwill and excess cash implies an optimal allocation of capital which again is something very questionable. The most important thing at the end is to always use the same formula as the comparative values are the key.

I will calculate and compare ROIC for two companies that will give an excellent basis for discussion, The Southern Company and Apple.

For net income, I take the average net income over the past 5 years as often one-off items can skew current metrics. The debt and equity are derived from the balance sheet. I will make no adjustments as it keeps the calculation conservative.

Table 5 Southern's return on invested capital

Southern Copmany	2012	2013	2014	2015	2016	AVERAGE
Net income	$2,415	$1,710	$2,031	$2,435	$2,493	$2,217
Short term debt	$4,828					
Long term debt	$72,022					
Stockholders' equity	$24,758					
ROIC	$2,217	/	$4,828 +	$72,022 +	$24,758 =	2.18%
(millions $)	Net income / short term debt + long term debt + equity					

Source: Author's calculations

Southern's return on invested capital is extremely low at 2.18%. Let's compare it to Apple's return.

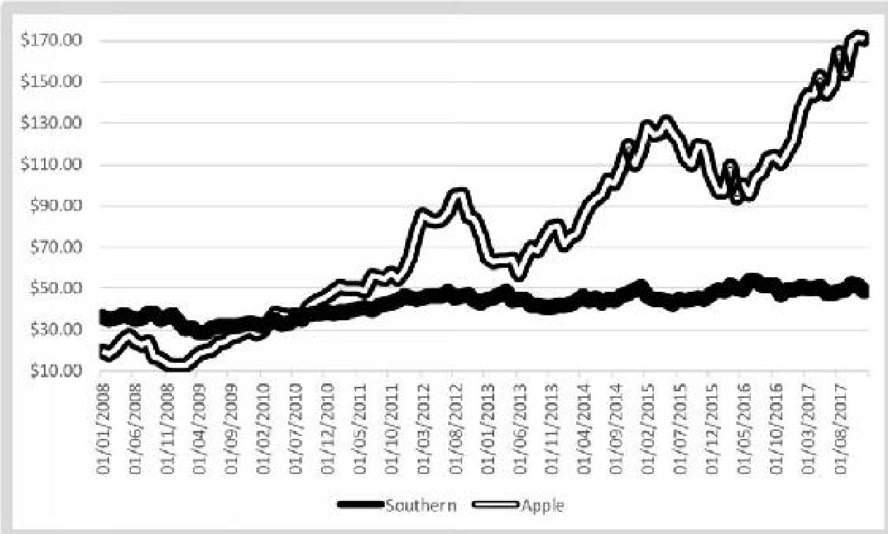
Table 6 - Apple’s return on invested capital

Apple	2012	2013	2014	2015	2016	AVERAGE
Net income	$48,999	$52,503	$71,230	$60,024	$61,344	$58,820
Short term debt	$18,473					
Long term debt	$140,458					
Stockholders' equity	$134,047					
ROIC	$58,820	/	$18,473	$140,058	$134,047 =	20.08%
(millions $)	Net income / short term debt + long term debt + equity					

Source: Author’s calculations

Apple’s ROIC is almost 10 times better than Southern’s which according to Charlie Munger results in a similar long-term return on investment. Munger might not be far from the truth as Apple’s returns have been close to a 20% yearly return in the past 10 years while Southern’s have been closer to 2% excluding the dividends in both cases.

Figure 25 Apple's stock versus Southern's stock performance in the last 10 years



Source: Author's data

Therefore, ROIC is an excellent metric to use when comparing investments, all other metrics fade in the long term as a company that manages to compound its capital at a high return rate will definitely do well over time.

Charlie Munger states that over the very long term, the return on capital is what determines the return that the stock will offer no matter the current discount. Of course, there is a difference in the return if you bought Apple in 2008 at $28.3 or in 2009 at $12.9 but the 2009 crisis is really a one of a kind event and even those who bought in 2008 at a huge premium in comparison to 2009 have achieved amazing returns. Investors who bought AAPL in 2008 would have increased their capital 6 times in the following 10 years while those who bought in 2009 would have increased their capital 14 times. Both are great results and show the importance of the ROIC measure.

Using the ROIC tool for assessing investments implies two things;

one is a long-term view on investing and the second is that you compare many investments to find the best one. The long-term view allows the investor to disregard temporary market sentiment as timing the market is impossible. However, a stable and high ROIC provides the necessary security that a permanent loss of capital is unlikely.

Of course, if there is the possibility of buying a wonderful business at a discount to its intrinsic value determined by its ROIC metrics, even better. However, as holding cash has a cost and market timing is something impossible to do, when you find a business that has a strong return on invested capital in comparison to other businesses, is fairly priced, and has a sustainable high return thanks to a strong moat you might want to invest in such a business. In case the business remains the same but the stock price drops, just buy more. Such a strategy has made both Buffett and Munger billionaires, it might make you at least a millionaire if not more.

From a broader perspective, ROIC is just another metric to use when analyzing a company. However, it is one that deserves a significant weight in your decision-making process.

Combining the three components for intrinsic value

By combining all three components, you should end up with a range of values that represent the intrinsic value of the company for you, the owner. The current book value adjusted by dividend payments and historical cost accounting issues will show you the value created in the past that you are buying now. Current earnings or the change in book value will show you the value that is created at the moment you are analyzing the stocks. The third component; return on capital will tell you what to expect in the long term as that is the actual future value creation. The higher the return on invested capital and the cheaper the stock from a valuation perspective, the better.

From a value and margin of safety perspective, a higher return on invested capital gives the company more stability and a larger margin of safety to the buyer.

The actual intrinsic value depends on your investing preferences. By investing preferences, I mean expected rates of return. All we can

rely on in investing is that our long-term investment returns will be perfectly correlated to the business earnings of the companies we own. Further improvements can be achieved by taking advantage of market irrationalities where the focus on business earnings gives us a value around which to trade. For example, your required investment return could be 10% and therefore you will calculate your intrinsic value using a multiple of 10 on current and future earnings. When the stock price is below your intrinsic value it could be considered as a buy.

Sometimes a stock is undervalued because it is in a process of building a new hotel, pipeline, mine, or whatever kind of investment where the value will be returned only in a few years. The market usually discounts such projects at a much larger rate than normal, creating excellent investing opportunities for the patient and intelligent value investor. More about that in the part about hyperbolic discounting.

Now, you might or might not agree with Munger and Buffett as they evolved from the pure value investors they had been in their youth, but return on capital is one of the most important metrics when investing and is crucial to intrinsic value. Combining intrinsic value and a margin of safety is what you need for low risk, high return investing. And remember, a back of a napkin calculation is usually more valid than tens of mathematical formulas and complicated discount models.

There is another part of the intrinsic value equation that is often omitted due to investors' lack of sophistication, and that is growth. Many see value as static, but the modern value investor has to implement growth in his value estimations.

TOOL #8 Growth is a key component of value

There is a lot of talk about the difference between growth and value investing. I too, compared the two investing styles when discussing the academic research on the subject from Fama and French where they found how value stocks outperformed growth stocks in 84 out of the last 90 years when analyzing 10-year returns. Nevertheless, academic studies always analyze the market from a broad perspective while intelligent investors can be much more sophisticated than academics. It is important to note that differentiating between growth and value displays ignorance, not investment sophistication. Not surprisingly, the biggest investment institutions strongly focus on differentiating between growth and value.

According to Bank of America and Fidelity, just to make an example, growth stocks are priced higher, earnings growth is higher and the stocks are more volatile than the broader market. The actual truth is the opposite. A value stock is priced lower than the broader market and is also cheaper in relation to similar companies in the industry. Also, value stocks are described as less risky.

The differentiation comes from lack of sophistication as there shouldn't really be a difference between growth and value because growth is a key component of value.

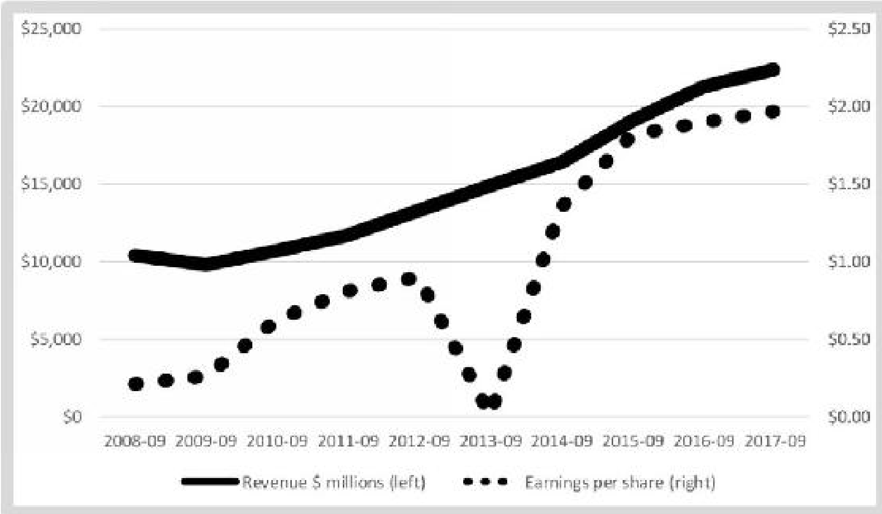
In his 2000 Letter to Shareholders Warren Buffett discusses how: "Market commentators and investment managers who glibly refer to "growth" and "value" styles as contrasting approaches to investment are displaying their ignorance, not their sophistication. Growth is simply a component – usually a plus, sometimes a minus – in the value equation."

Therefore, the modern value investor has to analyze growth as a key component of value and include growth in the calculation of intrinsic value. What is important to know is firstly that growth can destroy value as well as it can create value, and secondly that it can have a negligible or enormous impact on valuation.

Growth as a creator and destroyer of value

The differentiation between growth that destroys and creates value is simple. Growth that destroys value burns cash and is not profitable while growth that creates value simply continuously replicates a business model that works with healthy returns on capital. For example, from 2010 to 2017 Starbucks more than doubled its revenue and tripled its earnings thanks to new business venues, improved margins and share buybacks. The return on invested capital has constantly been around 25%. Such returns on invested capital and growth potential have to always be included in the calculation of intrinsic value while also analyzing the risks related to growth which we will discuss later. Nevertheless, you have to account for such growth as value because it is, and it creates value.

Figure 26 Starbucks' revenue and profits from 2010 to 2017



Source: Starbucks data

A company that grew its revenue 10-fold in three years (2014-2017) is Blue Apron. However, its negative free cash flow also grew 10-fold in the same period clearly indicating that in this case, for now, growth is destroying value.

How to adjust your calculations for growth

If you find a company like Starbucks and you want to calculate its intrinsic value, you have to be able to estimate future growth rates, something that is impossible to do accurately. In July 2017, even Starbucks' management lowered its long term expected earnings growth rate from a range between 15% and 20% to 12%. If you did an intrinsic value calculation in June 2017, expecting long term earnings growth of 15%, your intrinsic value calculation would be completely wrong just a month later. The higher the expected growth rate is, the higher the present intrinsic value will be where only a minor difference in growth can lead to huge intrinsic value differences.

Therefore, the best way to include growth in the calculation of intrinsic value is to be conservative. For example, there is a much bigger possibility that Starbucks grows earnings at 5% per year than 12% over the next 10 years. A lower than expected growth rate

provides your intrinsic value with a better margin of safety. If you follow 10 stocks like Starbucks, I would bet that every year, one of those stocks, due to some temporary issues or negative sector sentiment, would definitely fall below a conservative growth calculation of intrinsic value. By following such a strategy and being patient, in ten years you would find yourself with an amazing portfolio of 10 value/growth stocks bought at extremely low prices with a margin of safety. The following paragraph discussing growth risks will help you determine how conservative should you be.

What a value investor has to be careful of when estimating growth

We already mentioned that growth can also destroy value which is the first factor to look for in a growth story. By looking at the company's cash flows you can see whether value is created or destroyed for the shareholder through growth. If there is no positive return on investment, value is being destroyed by growth. If there is a big possibility that the business model will create value for shareholders in the future, then one should look at margins. Margins that will likely improve with more scale will lead to value creation and vice versa.

The second thing to look at are all the risks that can compromise business expansion such as: market saturation, economic headwinds, higher input costs, inability for quality hires, competition, government issues, global shocks, cost of expansion capital, realistic growth ambitions etc. The better the estimate of what can affect the company in the future is, the better your intrinsic value calculation will be.

Growth at a reasonable price

Perhaps the best value investments out there are the ones that offer future growth but at a reasonable price. Companies that have healthy growth rates but valuations below the market average and a stable business model will probably deliver strong earnings in the long term even if their book values aren't really indicating that there is much value there at the moment. At the end it all boils down to comparing intrinsic values with conservative estimations for both value and growth.

Before digging into the margin of safety, we'll discuss the cyclically adjusted price earnings ratio (CAPE) made famous by Nobel Prize winner Professor Robert Shiller. The CAPE ratio is an excellent tool for eliminating short term noise in earnings that allows you to look at the long-term value of a stock, something Wall Street really doesn't do, thus there is your advantage.

TOOL #9 The cyclically adjusted price earnings ratio (CAPE)

Yale's professor Robert Shiller didn't get the so-called Nobel Prize for nothing, the CAPE ratio really works. It gives you a clue on the long-term trend around a security or sector and is an essential metric to use for long term investing purposes and value calculations. However, it is important to note that Benjamin Graham already used 10-year average earnings in his books, so Shiller's contribution comes mostly from his marketing and academic confirmation of the metric.

The main difference between the CAPE ratio and a standard price earnings (PE) ratio is that the PE relies on a single year of income information. Such information is usually skewed by the state of the economy or by one-off events such as asset sales or impairments. In 2017 after eight years of economic expansion, many have forgotten that the economy is of a cyclical nature.

To improve the price-to-earnings ratio, Campbell and Shiller (1988) developed the CAPE ratio which uses average earnings over a ten-year period to eliminate the usual volatility in earnings and cyclical effects. The first advantage the CAPE ratio has over its shorter-term counterpart, the PE ratio, is that it is much less volatile as it uses long term average earnings. The second is that as it uses long term earnings that represent real business performance. In other words, the CAPE shows when a market is cheap or expensive from a value perspective. When earnings decline in a recession, the standard PE ratio spikes while the CAPE ratio declines alongside lower stock prices as it takes much more time than a recession for average earnings to decline.

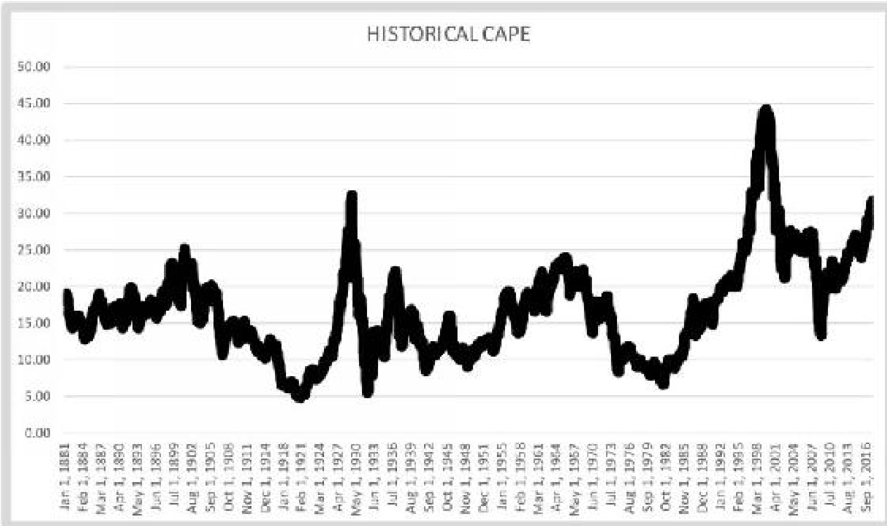
Figure 27 CAPE to PE comparison with buy and sell signals

Source: Multpl

Nobody likes the CAPE ratio because it often brings bad news

Seeing as the CAPE ratio shows the real long-term earnings behind an economy by eliminating the impact of short term cyclicality, it's a great tool to use when assessing whether the market is overvalued or undervalued. From the point in time at which I am writing this, at the end of 2017, only once in history has the CAPE ratio been higher than it currently is and that was during the dotcom bubble at the end of the 1990s. Even the 1929 bull market CAPE ratio was lower than the dotcom bubble one. Unfortunately, we all know how both situations ended for investors.

Figure 28 Historical S&P 500 CAPE ratio



Source: Multpl

As a CAPE ratio of 16.8 is the historical average for stocks, the current CAPE of 31.55 indicates the market is severely overvalued. The above figure shows how when the CAPE is low, future stock market returns are high and vice versa. 10-year yearly returns have always been below 5% when the CAPE was above 20, below 1% when the CAPE was above 25, and negative when the CAPE was above 28. There are a number of things an investor can do to take advantage of the CAPE ratio:

Rebalance across sectors and countries

As time goes by, CAPE ratios vary enormously across different sectors as sector profitability is impacted by its own cyclical patterns. All sectors experience wild swings in sentiment and, consequently, in their CAPE ratios. Long-term value investors can reap huge rewards by carefully rebalancing between cheap and expensive sectors over time. Barclays' and Robert Shiller's research has shown that rebalancing an S&P 500 portfolio according to relative sector CAPE ratios would have outperformed the S&P 500 by 4 percentage points per year since the

CAPE ratio was introduced in 1988.

High CAPE ratios are mostly found in countries that have had strong easing monetary policies that inflated the money supply resulting in asset bubbles. Countries that didn't stimulate too much, and perhaps had a political or economic crisis, have CAPE ratios that are sometimes even in the single digits. As I am writing this, the global CAPE ratio ranges from 5.6 in Russia to the 31.55 in the U.S. Looking at the CAPE ratio is essential for those who seek value globally and rebalance accordingly. The result can even be better if applied to individual stocks.

Look at individual stocks and add the growth factor

If you want even better returns than what you can get from rebalancing the S&P 500 and globally, you have to look at individual stocks that are in a temporarily weak sector but are still doing well and perhaps even growing. The growth might not be coming from earnings (as the sector is in trouble), but could come from acquisitions as the best acquisitions are made when assets are cheap.

What is also important is to insert economic growth and development into the CAPE. Given that China and India have been growing at staggering rates in the past 10 years, corporate earnings have also been booming, which skews the CAPE metric because of past low earnings. Therefore, be sure to adjust the usage of the CAPE by also analyzing the growth of the respective stock, sector or country. You can adjust a CAPE ratio by looking at how much the earnings have fallen in the last economic or sector contraction, and apply the same decline to future expected earnings derived from current earnings. In this way you will get a more realistic view than what the CAPE offers. To be conservative, assume two recessions in the next 10 years when calculating future earnings by using the CAPE ratio.

For companies that don't have 10 years of data, use shorter time spans for earnings extrapolation and also try to estimate what will happen to the company's earnings in a recession. When you find growth in combination with a low sector CAPE, you know you are onto something.

The CAPE ratio is just one of many tools that can be used, but it's extremely important as historical analysis shows that it has been pretty consistent in determining future returns. Buying an asset when the CAPE ratio is low gives you a margin of safety if there isn't a structural problem with the asset, sector or market. The stock market is extremely volatile in the long term. The CAPE ratio is a great tool that shows whether the market is overvalued or undervalued. It is an amazing tool that certainly helps in determining a value range for any stocks, be it by looking at the situation in the general market, sector or stock.

Chapter 6

The margin of safety

“The function of margin of safety is, in essence, that of rendering unnecessary and accurate estimate of the future”

Benjamin Graham

Identifying a margin of safety

"Value investing is the discipline of buying securities at a significant discount from their current underlying values and holding them until more of their value is realized." Seth Klarman

The essence of value investing is finding a bargain, i.e. buying a dollar for much less than one hundred cents. When a bargain is found (and bargains may be very difficult to find, especially in a market like the one we're in now), the next step is to determine the margin of safety, or the discount the price offers in relation to the undiscovered or intrinsic value. The bigger the discount, the better.

The point of the margin of safety is to find investments where the likelihood that you lose money in the long term is minimal. Let's say a stock is trading at $5 per share while just the real estate it owns is worth $10 per share. We could easily say that the margin of safety is 50%. If the company is just barely profitable and has no debt, it is highly unlikely that you will lose money with such an investment over the long term because there is always the real estate that gives value to the stock, no matter what the business is doing. You might think that it is impossible for a stock that has $10 per share in real estate to trade for $5? Well, the markets often become extremely irrational as investors usually put their focus on the latest news. That temporary negative sentiment can even make a stock trade at 10% on its intrinsic value. The price of a stock is practically always different than the intrinsic value of a stock.

For example, in October 2008, more than 1,000 stocks out of the almost 8,000 traded on U.S. markets were trading at a price that was below their cash per share, not even real estate values, pure cash! At the same time there were many stocks, especially in emerging and frontier markets that were trading at 10% or even less of the value of their assets, in some cases extremely valuable real estate.

The nice thing is that the market constantly offers such bargains with a margin of safety. Nevertheless, such an investing strategy requires:

- Discipline, so that you don't jump into the latest market fad.
- Hard work, researching every investing option on the market and doing in depth due diligence on stocks that show potential. More often than not, the stock is fairly priced even if the price is much below its book value.
- Willingness to underperform for indefinite periods of time as a stock can remain undervalued for longer due to negative market sentiment. As long as the market is irrationally euphoric about something, it won't recognize nor look for value.
- Patience to wait for the right time to buy.

The importance of a margin of safety and how big it should be?

A value investor has no interest in buying for something at fair value, i.e. paying $1 for $1. By investing at a discount, a value investor is unlikely to experience permanent capital loss. The margin of safety depends only on the price paid. Buffett's famous quote that describes a margin of safety is the following:

"When you build a bridge, you insist it can carry 30,000 pounds, but you only drive 10,000-pound trucks across it. And that same principle works in investing."

The essence of using a margin of safety while investing is limiting the potential for loss. By limiting the downside, an investor is more exposed to the upside and thus invests with less risk for the same or even higher expected returns than what the rest of the market will get. Another thing important when investing with a margin of safety is that it shines in a declining market because when corporate earnings start declining, investors look for safety and protection, which can only be found with stocks that offer a margin of safety no matter what happens with the economy in the short term. Stocks that are already depressed might have only little room to fall further in a bear market thanks to their fundamentals.

Now, apart from the obvious importance of the margin of safety

that we have touched on in other parts of this book, the bigger question is, how big should this margin be?

Unfortunately, there is no formula, it all depends on the individual investor, your volatility tolerance, and how much risk are you willing to take in relation to the potential return.

The larger your margin of safety requirement is, the more difficult it will be to find suitable investments. Thus, a big part for determining how big a margin of safety should be, is the research that is put into the investment process. The more stocks you have the time to analyze and follow, the higher the probability is that you will find investments with a margin of safety. The focus lies here both on the analysis and focus. The bigger the database of stocks that you have analyzed, the easier it will be to follow them and act when their prices fall into your required margin of safety range. Consequently, it is essential to constantly compare investments and buy those that offer the largest margin of safety or have catalysts that are going to unlock that value.

The issue with requiring a large margin of safety is that you will often hold a lot of cash. Holding lots of cash is not a bad thing per se, it allows you to invest when the opportunity arises and really achieve high returns with little risk. However, the opportunity cost of holding cash often leads to the relaxation of a few investing criteria and to investing mistakes. So, be sure to have a strong investing discipline and make the necessary research to invest with confidence.

An interesting way to approach a margin of safety is to do it in stages. Let's say you start buying a stock with a small part of your portfolio when the margin of safety is 20%. In case it becomes 40% you buy a larger part, if it goes to 60% you buy an even larger part. In this way, if you invest just 1% of your portfolio when the margin of safety is 20%, you get sufficient time to learn about the company and determine whether the value is real or there are some hidden risks.

How to identify a margin of safety?

The key to a margin of safety is that even if the worst possible thing happens, you don't lose money. I will now describe 3 easy ways to determine a margin of safety and please refer to tools #3 and #6 for

liquidation and intrinsic value that are also excellent when looking for a margin of safety. What differentiates the margin of safety from intrinsic value is the downside protection the stock offers in relation to intrinsic value.

TOOL #10 Cash per share/net cash per share

Cash is the easiest way to determine a margin of safety. It might sound too easy to be true, but there are times when a company's stock price is below its net cash per share. It even isn't that uncommon because investors usually don't aren't aware of a management's intentions. If there is enough selling pressure on the sector, a stock can easily trade at a price below net cash per share. Net cash per share is determined by deducting total debt from cash and cash equivalents. Cash equivalents are all assets that can be relatively quickly turned into cash. For example, in the third quarter of 2017 Apple has had a net cash position of $153.2 billion. The following figure shows how to go about calculating net cash.

Table 7 The net cash calculation for Apple

ASSETS	
Cash and cash equivalents	$20.3 billion
Short term investments	$53.8 billion
Equity and other investments (on asset side of balance sheet)	$194.7 billion
TOTAL	$268.8 billion
LIABILITIES:	
Short term debt	$18.4 billion
Long term debt	$97.2 billion
TOTAL	$115.6 billion
NET CASH	$153.2 billion

Source: Apple's financial statements

To make these calculations easier you can compare the net cash number with the market capitalization or divide the net cash with the number of outstanding shares, which was 5.2 billion in Q3 2017 for Apple. In this case, the net cash per share amounts to $29.4. This is far below Apple's current stock price but it is one price point to use when creating a margin of safety range. In 2016 Apple's stock was at $90. By deducting the net cash from the 90$, the actual price of the stock was just $60 which can then be used in comparison to the value of future earnings.

An important thing to note here is that before being able to use the net cash for dividends or stock buybacks, Apple should pay U.S. corporate tax on the cash held abroad which in this case is practically all of Apple's cash. Depending on the corporate tax rate or any special tax holiday, an investor has to further discount Apple's cash.

However, not everything is as easy as calculating the net cash per share. If a company isn't profitable and will burn through lots of cash in the future, we can't really look at the cash as a margin of safety. Growth and biotechnology companies often have large cash balances due to capitalization rounds which makes them seem cheap, but given their cash burn rate, they aren't.

The time to buy stocks trading below net cash value is in market downturns when pessimism surrounding the whole market creates

high selling pressure and pulls all stock prices down. A combination of 1) sound fundamentals, 2) a business that operates profitably, 3) low debt, and 4) more cash than the market capitalization is the ultimate margin of safety investment.

TOOL #11 Dividend sustainability

It is possible to find sound and safe businesses that have more cash in relation to the actual market capitalization, but that only happens in rare occasions like a severe recession. Nevertheless, a more applicable exercise is to check the sustainability of the dividend given the cash amount held, and its flow.

One of the worst things that can happen to a stock is a dividend cut. Many investors who invest in a company are attracted by the dividend. If the dividend payments are stretched and the dividend is cut during a recession or a temporary sector downturn, many investors prefer to switch for some other holding, even if that might not be the smart thing to do. Additionally, a lower or no dividend yield eliminates the interest from new dividend investors and disables dividend reinvestment plans. The consequence can be terrible for a stock.

For example, General Electric slashed its dividend only two times since the Great Depression. On February 27 2009 the company announced it will cut its dividend from 31 cents to 10 cents per quarter. The stock price dropped 59 cents or 6.9% on the announcement date, from $9.28 to $8.60, and dropped to a low of $5.87 in the following week for a 37% weekly drop. The stock recovered later but it shows how big of an impact a dividend cut can have, because as irrational as it may be, many see dividends as the holy grail of investing.

Figure 29 - GE's stocks after the dividend cut announcement from February 28 to March 09 2009

Source: Author's data

What all this means is that if you're looking for a margin of safety in the dividend a company is paying, the most important safety factor is the sustainability of the dividend. To check whether the dividend is sustainable one must check the available cash and also the operational cash flows, especially how those cash flows change during bad economic times.

Similarly, on November 13 2017, GE slashed its dividend from 24 cents to 12 cents per quarter. Even if this is supposed to make the company more stable, the stock price dropped 8% on the announcement day.

Figure 30 - GE's stock during dividend cut in November 2017

Source: Author's data

The November 2017 dividend cut was just the final blow for GE in 2017 as the year to date stock price drop has been 44%. The big yearly drop shows that the market expected such a situation and a dividend cut, but nevertheless the stock dropped further after the announcement. This is why I cannot stress how important it is that the dividend be sustainable when using it as a margin of safety.

To see whether a dividend is sustainable one must look at the company's current margins and estimate how a recession would affect those margins. Perhaps it is best to look at how the company fared during the last recession or cyclical downturn. If the margins are tight and even a small change in the form of competitor pressure would make the dividend questionable, then there is really no margin of safety there. If the business is sound, has a moat and its business is not that much affected by economic cycles, the dividend can be considered safer which increases the margin of safety.

As for the cash amount held on the balance sheet, the question is: What is the managements' intention? If it will be spent for acquisitions or expensive buybacks, one cannot consider it a margin of safety.

Determining whether a dividend is safe really boils down to knowing both the company and the sector well. That being said, be very critical as many get easily blinded by what the management has to say or by the past strength of a company. General Electric is a great example of this.

Liquidation Value (Refer to tool #3)

Liquidation value is the ultimate margin of safety. If a company has issues and you properly assessed its liquidation value, you can sleep well if the liquidation value is above the current stock price. The important thing is to be very conservative when assessing such a value, because in a liquidation the assets don't usually get sold at face value.

Intrinsic Value as a margin of safety (Refer to tool #6)

The bigger the difference is between the stock price and the assumed intrinsic value of a company, the better. In the long term, the stock price usually reflects the full value of a company and underlying fundamentals and therefore looking at intrinsic value also provides a margin of safety if the intrinsic value is properly calculated. As always, allow for error as there is a lot of subjectivity when assessing intrinsic values.

Chapter 7

The business moat

"I want a castle that I can understand, but I want a castle with a moat around it."

Warren Buffett

Using qualitative factors to analyze the risks of a company

"You want to focus on risk before you focus on returns. A lot of it is focusing on multiple scenarios, what can go wrong? How much can you lose?" Seth Klarman

You might be surprised that I discuss qualitative factors in determining a margin of safety, but the current investing environment is much different than it was in the 1930s when the strategy was formed by Benjamin Graham and focused on accounting values.

A margin of safety can be found in the number of users of a new technology, the company's market share, competitive advantages, brand strength, management competence and focus, geographical positions, legal jurisdictions, etc. However, don't be fooled by qualitative factors as at the end of the line, the final answer is given by the cash the company produces and the price you pay for it, nothing else. Nevertheless, it is important to understand and always take qualitative factors into consideration when analyzing a business.

As a value investor you will often be attracted by stocks that seem incredibly cheap on paper. However, in the majority of cases, such stocks are cheap for a reason. It is extremely important to understand the business model when analyzing a stock and also understand the qualitative risks. Qualitative risks can come in the from of changes in regulation, law suits, incompetent management, increased competition.

TOOL #12 - Determining a business moat

A qualitative factor that cannot be omitted is the inherent stability of the analyzed business. This requires deep sector knowledge, the understanding of underlying sector trends and consumer behavior. A stock might seem incredibly cheap but if it is losing customers, it is cheap for a reason. Having a large business moat is a key margin of safety indicator. There are no precise tools on how to measure a business moat, as today most of the moats are of a subjective nature given by the strength of the brand. That being said, the best way to go about analyzing moats is to compare the analyzed business with the competition and potential competition. If it is really difficult to find a threat to the business, that business might have a large moat.

Buffett would describe a business with a durable competitive advantage, or moat, as having the following:

"A truly great business must have an enduring 'moat' that protects excellent returns on invested capital. The dynamics of capitalism guarantee that competitors will repeatedly assault any business 'castle' that is earning high returns. Therefore, a formidable barrier such as a company's being the low-cost producer (GEICO, Costco) or possessing powerful worldwide brands (Coca-Cola, Gillette, American Express) is essential for sustained success. Business history is filled with 'Roman Candles,' companies whose moats proved illusory and were soon crossed.

Our criterion of 'enduring' causes us to rule out companies in industries prone to rapid and continuous change. Though capitalism's 'creative destruction' is highly beneficial for society; it precludes investment certainty. A moat that must be continuously rebuilt will eventually be no moat at all."

The things to look for in order to determine whether a company has a moat are the following:

- Low Cost Provider – If a company can continually be the cheapest company offering a satisfying product to customers, there is no need for us to switch to something else.

- High Switching Costs – This is Microsoft's moat. As long as most people are using and used to their operating system, it will be costly to switch to something else.
- The Network Effect – When a company manages to build a network effect that makes it an advantage over all other infrastructure and where the costs of building a new network would be extreme, we could consider the business as having a large moat. Examples of such a network effect are Amazon and Facebook.
- Strong Brand Name – Apple has managed to create an extremely strong brand to which customers attach a lot of positive emotions. This allows the company to have higher margins than the competition and shows the power of the brand. In an environment where all things are available at extremely low prices, brand strength is something that will just increase in importance.
- Reputation – A reputation for quality goes far in today's world. When combined with customer awareness and a leading industry position, a company can become synonymous for the product. Just think of Google, Band-Aid, Post-it or Kleenex.
- Economies of scale – Some operations require huge upfront investments where the pay-off comes from future low-cost offerings or production. Once such a business is in operation, competitors know that building a similar operation would eat out all the profits in the sector and therefore desist from investing. A simple example is a utility. Nobody is going to build a second electricity grid for the same area.
- Government Protection – This is perhaps the trickiest of all moat criteria mentioned up till now, but if a business can enjoy government protection, there is really not much others can do. However, in today's global business environment, fewer and fewer companies have a monopoly or any kind of protection from governments. On the contrary, governments are doing their best to make it difficult for companies to become bigger, an important risk especially for today's tech companies.

It’s extremely difficult today to find an investment that has a moat like those of the companies Buffett has found throughout his investment career. Therefore, owning a stock forever might not be as good of an idea as it probably was in the previous century. However, a comparable moat analysis is a must for any investment analysis.

TOOL #13 – Use what none of the great investors had before 1998 – Google

It is incredible how much information about a company can be obtained by simply searching it on Google, especially by looking at the news part. By googling the management, you can learn about their integrity and how they delivered on what they promised in the past. Learning more about the technology the company uses and the sector it operates allows to better understand the business environment and potential risks, especially if the information comes from third party unrelated sources. Something important is also how the company treats its employees and its reputation among industry observers. It is widely known that if you ask people from a few different companies in the same sector about their competitors' strengths and weaknesses, you will get to a pretty accurate picture of the environment.

If possible, a great way to analyze the qualitative side of a company is to buy the product. A product that is better than what the competition offers and makes you a happy customer is a good sign. But sometimes spending $20 on a pair of trousers will save you from losing thousands from a bad investment in a company that showed a lot of promise.

Similarly, looking at reviews on Google or online is extremely important. Further, Google Trends (which shows you how much a certain product has been searched for on Google), can really give an indication of future sales. There is often a big difference between the opinion that stock market analysts and common consumers have.

TOOL #14 - Analyzing the quality/integrity of the management

The quality of the management is key to a business. Therefore, we must seek companies which have quality managers that have their interests aligned with the interests of the shareholders as much as possible. Reasons to avoid investing in a company or at least require a larger margin of safety that de-risks the investment no matter what the management does, are the following:

The management controls the company, not the shareholders. Today's corporate environment is one where many companies don't really have an owner. Various ETFs, mutual and pension funds often own small parts of a business and there is really no ownership coherence. This leads to many issues that do not really create long term shareholder value like growth for the sake of growth and constant shareholder dilution through option rewards.

One of the examples of the managements' myopic attitude are share buybacks that are made at a stock price higher than the book value. This might temporarily push the stock price higher, which allows for more options to be granted to the management but doesn't increase shareholders' value and is beneficial only to those who sell the stock to the management. A dividend would be much more beneficial to most shareholders as it would allow them to reinvest it at a lower stock price which would significantly increase their wealth in the long term.

Similarly, managers often invent business strategies where the only benefit is to employ the created capital and increase their salaries while the benefit to shareholders is questionable. Just remember that a CEO managing a company of 20,000 employees deserves a jet twice as big as one managing a 10,000 employee company. In a good economic environment, it is easy to jump from 10 to 20 thousand employees with a single acquisition. Given that shareholder control is limited, we often see many impairments when the economic environment takes a turn for the worse.

Investing can really be simple, if you buy a good business with quality management at a fair price, which needs to happen only a few times in your life. If this happens, you will almost certainly beat the market and do extremely well. As already discussed, there have been plenty of opportunities to buy Berkshire Hathaway at a price that is below its reported book value. Given Buffett's tenure we can clearly state that his goal is to properly allocate capital at the best possible risk reward rates for the benefit of all-shareholders. He has been doing so for more than 50 years now. Thus, there is proof of his integrity. When it comes to integrity, there is no need to rush, sooner or later the market will push the price of wonderful businesses with excellent management to extreme lows. This usually happens when most investors are infatuated by a new investing trend like the internet era in the 1990s or passive market funds in the 2010s.

TOOL #15 - Potential activist involvement can be considered a margin of safety

When a business gets into trouble, resulting in a depressed stock price (be it through declining revenues or lower earnings), the previously mentioned lack of shareholder coherence in combination with the low stock price, can make a company an activist target. An activist investor has the goal of unlocking the value of a company by either changing the management or forcing it to make certain decisions. When a company is in trouble, looking at whether it could become an activist target could provide an additional margin of safety.

A nice example of how activist investors operate is the involvement of Jana Partners with Whole Foods. Jana Partners disclosed a 9% stake in Whole Foods in April of 2017 making it Whole Foods' second largest investor. Jana's target was clear, putting Whole Foods up for sale. Such an attitude made Whole Foods CEO John Mackey say the following:

"But these guys just want to sell us because they think they can make forty or fifty percent in a short period of time. They're greedy bastards, and they're putting a bunch of propaganda out there, trying to destroy my reputation and the reputation of Whole Foods because it's in their self-interest to do so."

Needless to say, Whole Foods was sold to Amazon at a 27% premium already in August 2017 which provided an excellent margin of safety for Whole Foods investors.

Chapter 8

Do not lose money

“Rule No.1: Never lose money. Rule No.2: Never forget rule No.1.”

Warren Buffett

TOOL #16 - It all boils down to the price you pay

The main factor in determining the margin of safety is the price you pay. If you overpay for a stock, the margin of safety will probably be non-existent. At a lower price, it could be small while at an even lower price, it could be large. Therefore, the best thing to do is to invest only in stocks that offer a large margin of safety. Consequently, the larger is the margin of safety, the larger will be your investing returns while the risk will be lower.

Given that it's impossible to accurately determine the intrinsic value of a stock, the best thing to do is to buy with a large margin of safety in order to allow for human error. There are many investing theories that diminish the importance of the price you are paying for your investments, especially in bull markets and the current passively managed index investing craze based on the assumption that stocks will always go up. Similar beliefs were in place many times in history (think 1920s, 1960s and 1990s) that unfortunately didn't end well for those who mindlessly invested into the stock market without paying any importance to the price they were paying. This should go without saying but I want to really stress it and name it as a tool because it is extremely important.

The stock market and especially individual stocks are extremely volatile. This is a bad thing for some, but an excellent thing for value investors. Never forget that the investing risk you are taking mostly depends on the price that you are paying. The lower your price is, the higher will be your returns and the lower your risk. This does not mean that a stock is a good buy after the price has significantly dropped because usually, the price drops for a reason. Being careful of the price you are paying means buying at a discount to the intrinsic value. The bigger the discount, the better the investment.

The more patient you are to wait for a stock to be discounted in relation to its long term intrinsic value, the bigger the discount will be thanks to the volatility of the stock market. Further, the more stocks you analyze and whose intrinsic value you calculate, the more

opportunities there will be to invest.

The essence of value investing is buying at a discount to the intrinsic value (thus, with a margin of safety). The actual discount to be looking for depends on one's personal risk reward preferences and the easiest way to determine the searched discount is to look at the long-term business earnings and intrinsic value. If you aim to get a 15% return from your investments, then when the current stock price leads to a long-term average price-to-earnings ratio of 6.6, you know you have found a bargain. Someone who looks for 10% returns will have a smaller required discount as the required long-term average PE ratio will be 10. As we cannot know when the market will recognize the discount, it is important that there is value creation in the business and that the price paid is at a discount in relation to intrinsic value. This will allow you to get some kind of value even if the market doesn't immediately recognize the full value of a stock.

The problem with demanding discounts that lead to 15% or 20% returns is that such discounts don't happen that often but they definitely happen. The more time there is to analyze investing ideas, the more patience there should be to wait for a large discount. In addition to this, the more knowledge there is, the bigger the required discount in relation to the intrinsic value can be.

One thing in relation to the price paid that often misleads value investors is the assumption that the stocks can only trade at a discount after a significand drop in price. What happened in the past with the stock price shouldn't have a big weight on your decision making process. What is important is the discount to the intrinsic value, which means that a stock can be undervalued even if it is at all-time highs.

The sector the business operates in as a segment of value

There is no point in finding the best gold miner out there only to lose 80% of your portfolio in place of 90% if gold prices fall after a period of exuberance. The conditions of the sector must play a part in your decision. The point is to invest in the sector when the risk is low and the upside is high. The more you know about a sector, the better you will fare. There are many different sectors but it is possible to

determine a set of rules that can help in estimating long term developments as the market is usually focused on short term issues. With a bit of common sense and a fundamental, long term approach, it’s possible to take advantage of the natural cyclicality in various sectors, especially commodities.

TOOL #17 Analyze the cyclicality of a sector

As in life, so in investing, nothing is permanent. We as humans love linearity and stability. It's something primordially wired in us that has allowed us to survive in nature. But the investing environment is completely different. It is a world where you have to accept volatility, and it's even better if you can take advantage of it.

When analyzing a commodity, which is usually cyclical, the thing to analyze are the average mining costs and the trends in the sector. The market price of a commodity can remain below the production cost for a while but not for long as the losses soon force high cost producers to cut production. Consequently, the lower production lowers supply and a new higher balance price is formed. As soon as somebody is making profit, others create new supply and the cycle restarts. Every sector usually has a cyclical path so be sure to learn it when analyzing cyclical stocks.

The second thing to look at when analyzing a sector is long term supply-and-demand trends. If supply is constrained while demand is constantly growing, you have found a winner. Think about the most beautiful real estate properties, you can't really increase the number of penthouses around Central Park. If the sector is growing, like an emerging market economy or the elderly population in a developed economy, then many businesses are going to take advantage of the positive environment. A growing sector usually provides another margin of safety as even if the management isn't the best, the growth can lead to safe returns.

TOOL #18 - Analyze the impact of the natural cyclicality of an economy

Every business operates in an economy and every economy is cyclical even if it might not look like it after a few expansionary years. However, according to the National Bureau of Economic Research, a recession has hit the U.S. economy on average every 58 months since 1945. Therefore, even if it might not look like at the moment, always expect a recession and create a model for the company's intrinsic value that takes into account the effect of a recession on revenue, costs, earnings, debt and cash flow.

In a recession, the most important thing to know is that other investors usually panic. Their panic makes them sell their holdings at really cheap prices because they think the temporary issues will be permanent or they fear more stock price declines. The psychological twist is the same thing that makes the majority of investors overvalue stocks in an economic expansion when nobody expects a recession.

Nevertheless, analyze how similar companies have fared in the previous recessions, look at how margins have behaved and try to calculate the impact on the company. If there is no probability that the company will go bankrupt, you have a margin of safety and can apply a CAPE ratio to the stock to get to the intrinsic value. As the average recession usually lasts only 11 months, there is time to analyze stocks but also don't wait too long as the stock market usually anticipates a recovery.

How to avoid value traps

Value stocks are tempting, but the vast majority turn out to be value traps. There are a few things to look at which lower the probability of getting stuck with a value trap.

Value investing is a practice that looks for stocks which are worth more than what you pay for them, and are thus considered a bargain. This could be due to a low P/E ratio, a low price-to-book ratio, unrecognized growth or a high dividend yield. A value investor hopes to make a profit when the market finally recognizes the mispricing

and corrects it by then fairly valuing the company.

However, buying a stock just because it looks cheap or has fallen significantly is risky because there is usually a good reason why the stock is a bargain. When there is such a reason, the stock's price might never recover because of intensified competition, lack of growth, management issues, or sector weakness. When the stock doesn't recover, it becomes an obvious value trap.

Avoiding a value trap is easier said than done but it's important to discuss as owning a value trap might lock up precious capital for long periods of time and have a huge opportunity cost for your portfolio. Some issues that create a value trap and help you avoid one are the following:

TOOL # 19 - Look for of future catalysts

If a stock is trading below what you estimate its intrinsic value is, it should have a margin of safety. The problem is that the market might never recognize the mispricing, and the stock could fall even more. Therefore, apart from finding value in stocks, an investor has to also look for catalysts that are going to unlock that value. If there aren't any catalysts on the horizon, the stock could easily become a value trap.

Future catalysts might come in the form of a takeover, increased or initiated dividend, higher earnings, improvement in business operations, cyclical turnaround, sale of asset, political perspective and many other forms. It is important that there is a high probability that something will happen in the future that will trigger the unlocking of the value. Therefore, always look ahead for what could happen to send the price of a stock higher, or at least improve fundamentals.

A good place to look for potential catalysts is to listen to the conference calls, look at sector trends, specific market developments and through the analysis of future changes in fundamentals.

TOOL# 20 Avoid secular declines in a sector

Apart from a lack of future company catalysts, it's very important to look at what is going on in the sector and the general outlook for the product. It's extremely important to analyze the supply-and-demand forces affecting a sector. The fact that (thanks to new technologies) there is enough oil for several generations that can be extracted at low cost, is a clear sign that makes oil investments a potential value trap, especially as we don't yet know at what speed the world will shift toward electric vehicles.

When there is a bargain in a growing sector or one with wide moat business, then the likelihood of the stock being a value trap is much lower. This is because sooner or later the business environment will change. If a company operates in a highly competitive sector that is in a secular downtrend, then the likelihood of it being a value trap is much higher.

TOOL# 21 Looking at significant insider activity

When a stock price drops and insiders are buying (especially middle management), it’s a clear signal that the employees have faith in the company. However, when there is much more selling than buying, it could be a signal that things in the company aren’t good at all and there is a reason behind the price drop.

One must be careful here because sometimes the CEO will buy stocks on purpose just to disguise trouble. Therefore, it is extremely important to see what the middle management is doing because for them a $100 thousand or even $50 thousand purchase is very meaningful while if a CEO spends 10% of his salary on purchasing stocks it might not mean much. You can find reports of insider activity with some specialized data providers or carefully document the SEC filings where a company reports insider trading activities. A company’s annual report is also important here, as it also always has a part that talks about insider activities, ownership and compensation. Be careful not to confuse a stock purchase from vested options with a real stock market purchase. Note that only market purchases at full market price count for significant insider activity.

TOOL #22 Check the sustainability of the dividend

We have already described how the sustainability of the dividend is an important factor in determining a margin of safety. Similarly, the sustainability of the dividend is a potential value trap indicator while dividend increases can be potential catalysts.

If the price of the item that the company is selling drops, it's clear that there won't be enough cash flow to continue paying the same dividend. On top of it, the market hates dividend cuts, thus if there is the likelihood for more dividend cuts, this could create a value trap even if the stock is already trading at a huge discount to its intrinsic value.

Peter Lynch, however, was famous for buying companies after the dividend was cut because the improved capital management would usually lead towards better financials in the future and perhaps a reinstatement of the dividend.

To check whether a dividend is sustainable it is extremely important to look at the cash flow statement of the company. See how much cash is needed to keep the dividend, how high the operating cash flows are, the financing costs, and the sustaining or developing capital investments. These things should be checked in order to try and figure out the available cash for future dividends.

The best way to approach such a test is to start with the price of the sold product, followed by the cost of making it and then analyze how the business environment impacts each factor that goes down to the available cash flow for dividend payments.

TOOL #23 Determining market sentiment

Behavioral finance is always helpful when assessing an investment. If a stock price has dropped for no obvious reason while the fundamentals have remained the same or even improved, we might be looking at a bargain. Sometimes investors sell a stock just because it's in a specific country or sector without understanding what the company's individual position is. Nevertheless, negative political sentiment about a country can keep the stock price subdued for a very long time.

Similarly, market sentiment can be extremely positive or negative and may last for a very long time. The power of market sentiment was first analyzed by Delong, Shleifer, Summers, and Waldmann in their 1990 'Noise Trader Risk in Financial Markets' article published in The Journal of Political economy. They found that irrational noise traders with erroneous beliefs both affect prices and earn higher expected returns. The strength of the irrational traders deters arbitrageurs from aggressively betting against such sentiment. As a result, prices can significantly diverge from fundamental values for longer periods.

Therefore, understanding market sentiment is crucial for determining investment entry points and the expected volatility of a stock. Extremely high negative sentiment can push stock prices to extreme lows. For example, the biggest Russian bank, Sberbank, was trading at a price-to-earnings ratio of below 4 during 2015 and the Ukraine Russian crisis. My point here is that even large companies can trade at incredibly low multiples due to negative sentiment. A value investor has to be prepared for such extreme bargain possibilities that fortunately happen pretty often. (NOTE: Sberbank's stock price increased 5-fold from 2015 to 2017)

TOOL #24 Look at the quality of the assets on the balance sheet

It's extremely important not to take the numbers on a balance sheet for granted and look at what's beyond that number. For example, a piece of highly sought after real estate in New York will probably be valued at more than its cost if it was bought in 1994 and still held at cost on the balance sheet. However, a mall built in 2007 in a city that's losing inhabitants might actually be valued much lower than what the balance sheet shows.

Up until 2015, Royal Dutch Shell (NYSE: RDS) had spent more than $7 billion on exploring the Arctic for oil. However, as oil prices fell, the $7 billion on its balance sheet as reserves and capitalized expenses suddenly became worthless.

To conclude, value investments are always tempting, as the high dividend yields and low price-to- book values attract investors hoping that those indicators will revert to the market's mean. However, the large majority of apparent bargains eventually become value traps. Therefore, it's extremely important to know what to look at and to really not be afraid to say no to many opportunities, no matter how attractive they might look if the above criteria aren't met. Thus, we're looking at a bargain when the company has great fundamentals, operates in a growth sector with a large moat, has many possible catalysts lying ahead, has weak competition, has real and strong asset quality on the balance sheet, an easily sustainable dividend, and has a low current price due to reasons not related to the company or its business environment. Sounds impossible? More about how to spot a bargain in the next section.

Chapter 9

How to find bargains

"If you don't study any companies, you have the same success buying stocks as you do in a poker game if you bet without looking at your cards."

Peter Lynch

TOOL #25 - How and where to find bargain investments?

We would all love to just run a screen, find a few cheap stocks to buy, and then wait a year or two to enjoy triple digit returns. Unfortunately, it isn't that easy. Value investors are put in a difficult position and therefore are forced to look for bargains in all kinds of places, dig deeper, and comprehend complex situations.

Where to look for bargain investments

If a value investment is simple to analyze, it's also an obvious thing for other investors which limits the discount and potential returns. This leads value investors to do research into areas such as corporate liquidations, complex securities, risk arbitrage, spinoffs, emerging and frontier markets. In order to find profitable bargains an investor has to look at the following:

Catalysts

What is perhaps even more important than finding a bargain is finding a bargain with catalysts that will lead towards a fair valuation. Finding a bargain that has some triggers that are going to unlock the value separates the investment's reliance on market forces, speeds up the unlocking of value, and increases the margin of safety. Examples of catalysts are an imminent liquidation of the business, a change in voting control, spinoffs, share buybacks, recapitalizations, dividend increases, revenue growth, a turn to profitability and asset sales.

Catalysts allow for the realization of profits, which is the most important factor in investing. They also reduce risk because if the discrepancy between the underlying value and the market value is closed quickly, the chances for new aggravating market or business circumstances are minimal.

Corporate liquidations

We're all attracted by businesses with growing revenues, earnings, and dividends. Those can also be value investments if the stock price is below their intrinsic values, but the problem is that such businesses

are usually fairly valued if not even overvalued. On the other hand, a business going into liquidation is usually a very complicated situation, with many uncertain outcomes ranging from labor settlement costs to asset sale prices or tax implications. The complexity of such situations makes investors prefer ongoing businesses. This is exactly why liquidations are a great place to look for bargains.

In this market, liquidations will be rare. But as soon as a recession hits the economy there could be many bankruptcies and liquidation sales because lots of today's businesses have been kept alive artificially by low interest rates on high-yield debt. Although only one in twenty distressed companies might be a good investment, finding such an investment is surely worth it as it's a "low-risk, high-return" investment. If there are any kind of catalysts attached to it, even better.

Complex securities

The more complex a company is, the more difficult it is to value and therefore many investors don't even look at it. This usually creates a mispricing that can be taken advantage of by the diligent value investor. Such a situation usually arises when a company has various share classes, equity interests in other companies or invests in complex investment vehicles.

A recent famous mispricing example was related to Yahoo and its 17% stake in Alibaba (NASDAQ: BABA) where at some point even when accounting a maximum U.S. profit tax charge on Yahoo's Alibaba gain, the value of Yahoo's stock was significantly below the market value of its Alibaba stake without even mentioning Yahoo's core business that had about $5 billion in cash at one point in 2015 and the 34% stake in Yahoo Japan.

There are many other examples of such mispricing of complex securities and there will be many more in the future thanks to the fact that few sit down and carefully analyze the sum of parts value. When there is a significant discount, it is time for the value investor to step in.

Accounting complexities – GAAP versus reported earnings

Few analysts and investors are accounting specialists. Let's be honest; accounting (which is basically the combination of law and numbers) isn't really an attractive field. This severely reflects on businesses that have different accounting policies or accounting issues. A skilled accounting investor can understand the possible effects of accounting issues or see the value beyond what the formal accounting figures indicate.

Just a simple example of how accounting is manipulated by corporate management is the gap between the Generally Accepted Accounting Principles (GAAP) earnings and the pro forma adjusted reported earnings.

Pro forma figures exclude certain items that are considered by management as non-recurring. Some of those expense items include the costs of laying off workers, legal costs, acquisition expenses, cost of stock-based compensation, expenses related to asset volatility, asset write-downs, effects of foreign-currency moves, omitted results from newly opened and recently closed stores and depreciations not related to current operations. By eliminating noise, the management's intention is to present earnings related to the core business as what is happening around it is of no importance. The best way to explain what is going on is to let you read about it yourself. Apache Corporation (NYSE: APA) reported the following in its annual report[6]:

"For the year ending 2015, Apache reported a net loss of $23.1 billion, or $61.20 per diluted common share. On an adjusted basis, Apache's 2015 loss totaled $130 million, or $0.34 per share. Net cash provided by continuing operating activities was approximately $2.8 billion, and adjusted EBITDA was $3.9 billion in 2015. Total capital expenditures were $4.7 billion for the full year, or $3.6 billion when excluding leasehold acquisitions, capitalized interest, Egypt noncontrolling interest, and spending on divested LNG and associated assets. This was at the low end of the company's full-year 2015 guidance range of $3.6 to $3.8 billion."

APA's management managed to turn a loss of $23 billion into an

adjusted loss of $130 million and even finish with positive adjusted EBITDA of $3.9 billion. It is practically impossible for an investor not specialized in accounting to understand what is real and what is not in such an annual report. Unfortunately, Apache Corporation is not an exemption in the corporate world but more of a new mainstream.

Further, many differences arise from accounting practices. A typical accounting question looks like this: Is a company going to recognize revenue when the product is shipped to a distributor, or only when the product is actually sold to a customer? Further, there are many differences in how the management decides to name a certain transaction or account. The same financial instrument can be held at cost or as available for trading which makes it difficult for investors to understand what is actually behind the reported numbers.

Even more important than where to find investment opportunities, accounting skills allow you to understand the risks better. Just to mention a few risks that can have huge impacts on a business are contingent liabilities, pension obligations, tax liabilities for the more complex situations and growth in receivables, growth in inventories alongside revenue stagnation, questionable property reevaluations, revenue recognition etc. for the less complex potential accounting issues. The point of this book is not to dig into the intricate world of accounting but the more accounting you know, the better an investor you will be.

Risk arbitrage

Risk arbitrage involves taking advantage of temporary market inefficiencies where the gain or loss depends on the completion of a business transaction, usually a merger or an acquisition.

In today's environment, this is typically related to acquisitions where the transactions necessitate significant regulatory approvals. However as investors, we have to look at risks and rewards. If an acquisition doesn't go through, the risk is that the stock price of the target company returns to the pre-acquisition levels. While if the acquisition goes through, shareholders are rewarded with cash.

Sometimes the acquisition price is still below the intrinsic value of

a company. Such situations really limit risk and can lead to quick positive returns. In case the deal doesn't go through, there will soon be someone else in line.

Merger risk arbitrage is a cyclical investment strategy. If merger or risk arbitrage becomes an attractive way of investing, the spreads are usually very small. This leads to fewer investors being attracted to the strategy which in time increases the benefits for those who do use risk or merger arbitrage.

Nevertheless, owning stocks of companies that have the potential to be taken over at a significant premium to the current price is always a plus that is often completely free. So, if choosing between two similar investments where one might become an acquisition target and the other unlikely, the decision is easy.

Spin-offs and IPOs

Another interesting opportunity for investors to find bargains are spinoffs and IPOs (initial public offerings). As the new entity isn't immediately included in an index, there isn't much demand for such a stock and being small, analysts are not incentivized to cover them. Shareholders that got the new shares usually tend to sell the spinoff as they prefer to keep owning the mother company. In such a situation, the spinoff company can trade at an irrationally low price.

With IPOs, the most common thing that happens is that investors expect the confirmation of the company's success. Therefore, it is not uncommon to see stock prices significantly drop after an IPO or to be undervalued because the market doesn't yet recognize the value, especially for growth stocks. However, if a good business is found, the early value investor can enjoy extraordinary returns as the stock goes from no market coverage to index inclusion and pension fund material.

Investing in the above-described special situations requires patience and discipline. Patience to wait for the opportunities to arise, and discipline to analyze them properly. Another interesting option

for where to look for bargains is small cap value stocks.

Small Cap Value/Growth

In order to be categorized as a small cap value stock, a company has to have a market capitalization below $2.5 billion and its stock price has to trade below its book value (where possible, or have the lowest book value). If the company is growing at the same time, even better.

There are several benefits to having a small market capitalization. One is that in such a case a company is always a takeover target, a thing that can bring about instant returns when an acquisition is finally announced. Other benefits include growth prospects, as it is easier to grow when you are smaller. For stock pickers like us, it is always a benefit when a company is a small cap because it is less frequently, or not at all followed by analysts. Due diligence eventually pays off though, as sooner or later the market recognizes good companies even amongst small caps.

On the value side, when a company is trading below its book value it means that the risks of investing are limited because in the case of a business liquidation or bankruptcy, there are enough assets to cover all stakeholders. However, proper due diligence here is essential as there is a big difference between having lots of fixed assets on your balance sheet and having lots of goodwill. In difficult times, goodwill is impaired as the acquisition that created it proves to have been a mistake while fixed assets like real estate are of real value on the balance sheet. Researching beyond the balance sheet can bring further benefits as by understanding the story behind a property, plant and equipment account, one can discover that some buildings are completely depreciated and not even on the balance sheet. Such a situation with no analysts following a company is a real gem, but it takes a lot of research of diligently going through every single small cap in the stock universe.

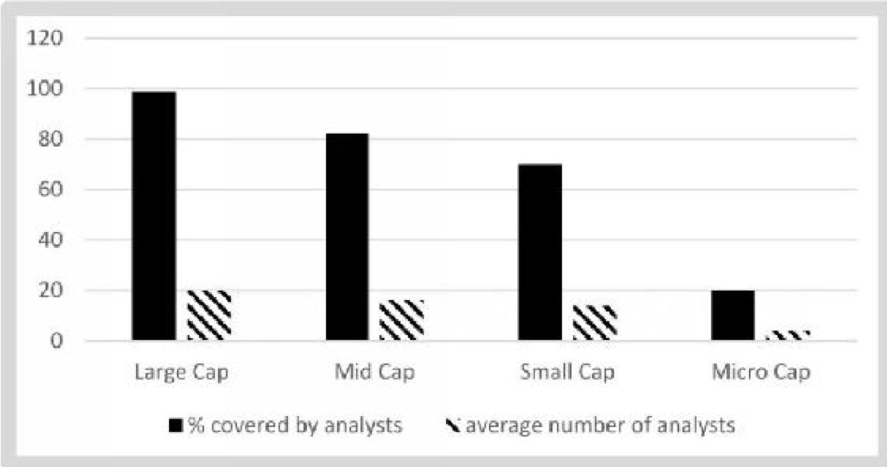
Going back to the research from Fama and French (the two professors who developed the efficient market hypothesis), they also found that small cap value stocks have outperformed any other stock type, from growth stocks to blue chips.

Why Do Small Cap Value Stocks Outperform?

The are many answers to this question. To find them, you have to dig in the dirt and not many analysts are willing to do that as it is easier to follow the crowd with big names. Big investment funds have to wait for a company to reach a large market capitalization before being allowed to invest in it, but by then the major profits have already been accounted for. If you are an investment manager and you make a mistake by overpaying for a large cap, there will be no hard feelings as everybody else did so as well, but if you recommend a small cap and the story doesn't end well, you will probably be fired.

The last reason is that value lowers investing risk. If the business doesn't end well, there are always assets to sell to cover the losses. Therefore, small cap value stocks trade at a premium which ultimately delivers higher returns.

Figure 31 Stocks by market capitalization and analysts' coverage



Source: NYU, Damodaran

What's the catch?

Investing in small cap value stocks comes with a catch that many investors don't have the stomach for. The catch is that small cap value stocks tend to have a mind of their own and don't move in sync with the S&P 500. For example, in 2015 the S&P 500 returned 1.3% while small cap value stocks had a return of -6.84%. The same was true in 2014 when the S&P 500 was up 14% while small cap value stocks were only up 6.5%. In 2007, the S&P 500 was up 5% while small cap value stocks lost 8%. How would you feel if when talking to your neighbor, you find out that his portfolio is up more than 30% in the last two years while you have a negative return?

The thing is that small cap value stocks must first be discovered by the masses, and only then, when becoming trendy, do they boom by getting a fair market valuation. Therefore, an investor may wait for a long time and underperform—like in 2014 and 2015—but sooner or later things change as has been the case in the last 90 years.

The low liquidity, higher uncertainty and general unwillingness to research small caps means a higher premium which in the end, brings about higher returns. Investors who are ready to invest in small cap values will be rewarded in the long term.

Bargains? Go global

One way to find bargains is to look for them internationally. A lot of things change over time in the politics of a certain country, and investors tend to overreact to such situations by selling all of their assets related to a specific country. International money outflows can create huge pressure on a smaller stock market, especially if the financial markets aren't that deep. Similarly, inflows can create huge booms.

The short-term volatility might be high due to political news or currency depreciation, but if you own stocks, the underlying assets will always give you a margin of safety, no matter where they are in the world. This, of course, is only if the assets are tangible and not financial. Owning a hotel on the most famous Greek beach or close to the Parthenon will always have its value because tourists are going to continue visiting such places, as has been the case for the last 2000 years. A good start at looking for bargains is to use the country's CAPE ratio which is usually available at starcapital.de.

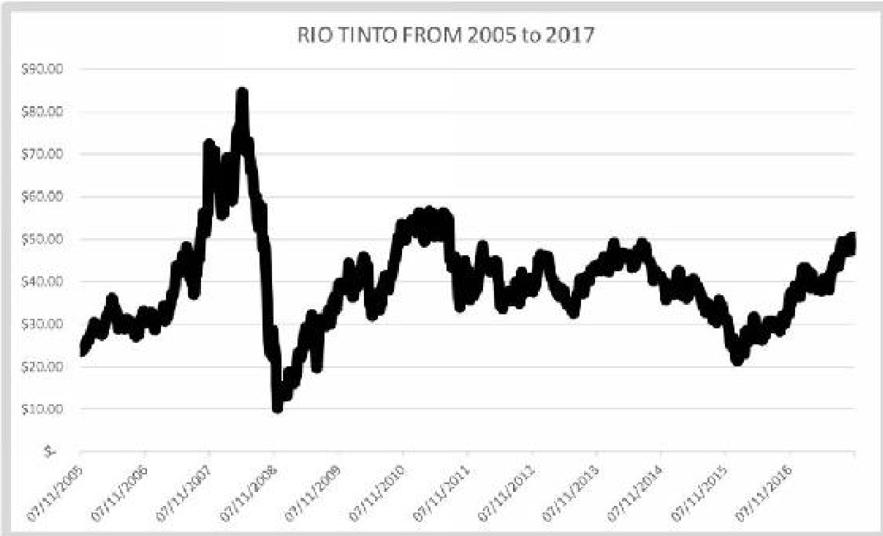
The equity home bias puzzle describes the tendency to invest the largest part of one's portfolio in domestic securities despite the benefits of international diversification. University of Chicago researchers, Moskowitz and Coval have found that US investment managers specifically exhibit a strong preference for locally headquartered firms that often create asset pricing anomalies. A Morningstar research in 2013 found out that US mutual fund investors keep only 27% of their equity allocation in funds that are not US domiciled while equities not domiciled in the United States accounted for 51% of the global equity market. It is logical that investors prefer the familiar, but this often creates incredible price anomalies. As I am writing this, the S&P 500 index has a price-to-earnings ratio of above 25 while the Chinese stock market index has a price to earnings ratio of 7.6. The difference is huge and will lead to immense long-term differences in returns for the wise investor, especially since the Chinese economy is growing three times as fast as that of the US.

Take advantage of sector cyclicality

The second place to look for bargains are sectors. Negative news from one company usually affects the whole sector and can lead to bargains. The best way to see if a company is a bargain is to assess its future and past intrinsic value. The CAPE ratio helps determine whether a company is only temporarily undervalued or not.

Further, something that is relatively easy with commodities is determining the future supply and demand and taking advantage of the usual cyclicality. High commodity prices lead to overinvestments that lead to higher supply and a collapse in prices. Consequently, lower prices limit new investments and sooner or later to a supply gap that often makes prices sky-rocket. The investor community, with its short-term orientation, usually uses current earnings to price commodity stocks and thus, such stocks are also extremely volatile. A value investor can find extreme margins of safety by comparing short term cyclicality to long term trends. Just look at the stock price of one of the biggest miners in the world, Rio Tinto (NYSE: RIO) over the last 12 years.

Figure 32 RIO's stock price is extremely volatile as investors forget about long term cycles



Source: Author's data

For me it is incredible that a stock of an established and diversified miner such as RIO can go from $20 in 2005 to above $80 just two years later, only to fall to below $10 in 2008, quickly rise to above $50 in 2010, drop to $20 in 2015 and then again quickly rise to above $50 in 2017. A value investor has to take advantage of the market's myopic attitude by focusing on how stock prices move along with a sector's cyclical trend. The safest option to look for when buying into a downward cycle is to find a company that has the lowest production costs and low debt. Such a company is not at risk of bankruptcy but might be cheap due to negative sector sentiment. Buying a company with more debt or higher production or mining costs is more of a gamble but will lead to much higher returns when the cycle turns. However, this is not proper value investing.

To find a bargain is one of the most beautiful things in investing but, you have to turn many stones to find them. In 95% of cases, a stock is cheap for a good reason, so be very careful when investing in cheap stocks.

However, sometimes the stock is just cheap and you can't find

anything wrong with it. This is simply because the market doesn't recognize the value in such a stock or is focused too much on the short term. The problem is that it might take a very long time before the market recognizes the value. That's why the virtue of the bargain/ value investor is patience. A good dividend or high earnings usually help with the waiting.

Hyperbolic discounting

There are many extremely interesting behavioral finance concepts that investors should be aware of and many of them will be the topic of my next book. However, one I find extremely interesting for value investors is hyperbolic discounting which was developed by Nobel prize winner Richard Thaler from the Chicago Booth School of Business.

Hyperbolic discounting describes the tendency people have to prefer a smaller reward that will come sooner rather than a larger reward that can come later. For example, even if it is logical to prefer to get $100 in a year rather than $50 immediately, the majority of people would choose the $50 immediately. This is because of how we humans are wired naturally and a significant effort has to be applied to eliminate such a bias. This bias is not uncommon to the investing environment.

Hyperbolic discounting might be the reason behind the obsession many investors have with dividends. Nevertheless, the value a company will create in the future is discounted at a much higher discount rate than the value it will create in the short term. For example, if there is a long-term project that will be completed in the distant future, then stock market participants discount those future cash flows and happenings at a much bigger discount rate that what the risk free rate is, plus a stock market premium.

Such market irrationality is another possible way of finding bargains where the intrinsic value is much higher than the stock price. A value investor simply needs to use a proper discount rate for the risk but not exaggerate as most investors do. What usually happens is that as the long-term project approaches completion and the future cash

flows become visible into next year's earnings projections, the stock price surges. Therefore, make sure to position yourself into such a stock before it gets on Wall Street’s myopic radar.

Bottom up and top down investing strategies

Top down investing starts by looking at the future and predicting what will happen. This is how the majority of market participants approach investing, especially in a bull market where it is all about future growth and what will possibly happen. In the 2010/2011 gold bull market nobody was concerned about costs, debt or operational efficiency and 90% of the questions analysts had for the management of gold mining stocks were about how they plan on increasing production.

During the euphoria, the miners that achieved free cash flows thanks to high gold prices didn’t even think about paying dividends but mostly pursued expensive acquisitions in order to take as much advantage as possible from what seemed to be an everlasting gold bull market.

It didn’t take long for a cold shower to hit the industry. From a high of almost $2,000 per gold ounce in 2011 gold prices fell to almost $1,000 in 2015. The euphoria soon turned into desperation as the positive cash flows disappeared, the high costs and huge debt burdens were impossible to manage and fire asset sales were the norm.

I used the gold bull market example to describe the usual pattern investors take in any given bull market. After a few good years, somehow most investors start expecting that the same will happen in the future and completely dismiss any possibilities that things in the economy or related business could ever change. Such an attitude has led to all past bubbles you can think of and it usually ends up with huge losses and painful life consequences.

A future-oriented approach to investing is the opposite of what a value investor does as there is no margin of safety, the investing is based on a trend, concept or theme and it is impossible to know how much of the positive expectations have already been included in the

price of a stock as there is no way to assess the fundamental value of it. Value investors don’t like to take unnecessary risks and therefore use a bottom up approach to investing.

Bottom up investing strategy – the value investing way

A bottom up approach to investing doesn’t look at what will happen and therefore it’s much easier to apply. Nobody knows what will happen in the future but looking at what has already happened and is reflected in the assets the analyzed company owns make investing much less risky.

The focus lies on fundamental analysis, where a careful analysis of the most common metrics from the price-to-earnings ratios to book values leads to a fair estimation of the intrinsic value of the stock. When that value is safely above the stock price, an investor in looking at a bargain investment.

My favorite investment opportunities are those where there is sufficient value in the assets that make it an extremely safe investment, while in the long term there is the possibility that the investment will get interesting for top down investors.

A bottom up approach allows the value investor to find excellent investments that have a large margin of safety, low debt, possibly low production costs and quality management which is a perfect example of a low risk, high reward investment.

Top down investors sell holdings that don't turn out the way they planned at ridiculous prices which always amaze me. When a growth company doesn’t meet the enormous growth expectations the market has placed on it but is still growing at a healthier pace, it is usually a time when a value investor can get the best of both worlds, growth and value.

In order to take the best advantage of value investing, patience is the key. A characteristic of the value investor is that he constantly analyzes security by security by using the fundamental bottom up approach and invests only when he finds an investment with low risk and a margin of safety, i.e. “whatever happens I don’t lose money,”

and high potential returns.

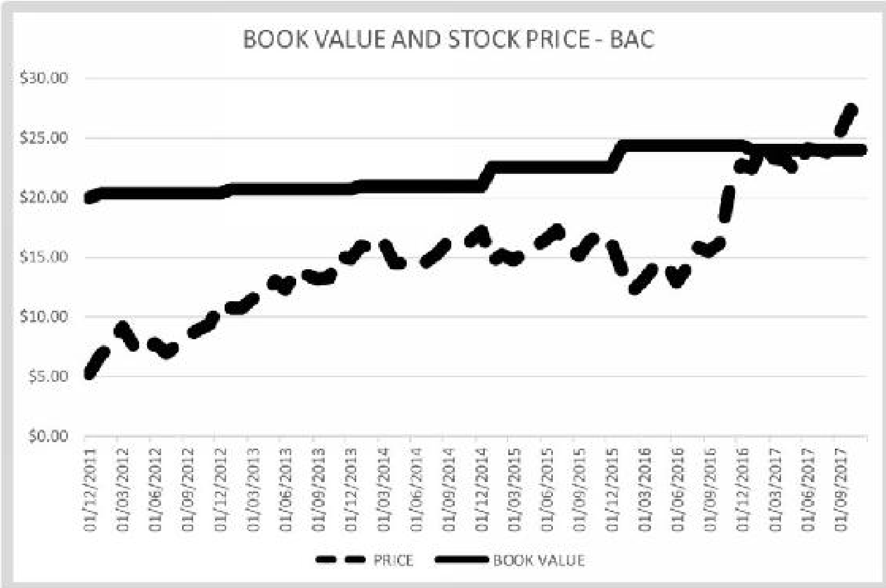
If there are no investments available that meet the required criteria, a value investor simply stays in cash and waits for some market to crash and create new investment opportunities. Sitting calmly and doing nothing while the market is euphoric is perhaps the most difficult characteristic for an investor to achieve.

When a bargain investment is found, the only thing to do is to buy and wait. So, on top of constantly digging through balance sheets and annual reports and not investing all the time, you also have to be patient and wait for the market to acknowledge the value you have found. From personal experience, I can tell you that this waiting period can last a few years.

A great example of how a bottom up investment approach is the Bank of America (NYSE: BAC) stock price movement from 2012 to 2017. In 2012 the book value per share was $20.24 but the stock price went even below $5 in 2011. Investors were pessimistic about the bank's earnings in a low interest environment, legal issues and financials were still a scary environment for most after the 2009 financial crisis. Nevertheless, a bottom up investor would focus on the book value, the small dividend and the history of the bank. Now, 5 years later, the stock price has reached and surpassed its book value as the bank eventually increased both its earnings and the dividend. The point is that if a company has significant tangible value, there is also a high probability that those assets will deliver quality earnings somewhere in the future. Therefore, a bottom up approach to investing always helps.

The funny thing is that now, as BAC's stock price is above its book value, most investors are starting to once more take a top down approach to this investment by thinking about the impact of higher interest rates, lower taxes, possible dividend increases, mergers and other euphoric factors while disregarding the stock's book value and margin of safety.

Figure 33 - BAC stock price from 2012 to end 2017 and book value



Source: Author's data

The point is that a bottom down approach allows you to take advantage of market irrationalities with minimal risk.

Conclusion

Value investing is mostly about keeping things simple. An average investing life cycle is very long and a lot of things will happen during that time. The economic environment will change many times, valuations will be volatile etc. What is important is not to do stupid things. If you don't understand something, don't invest, just wait for the next opportunity that you can comprehend and are happy about how it fits your risk-reward appetite and the path to your financial goals.

Related to life financial goals, don't take any risks, meaning that you should have an almost 100% guarantee that you will reach your long term investing goals no matter what happens in the economic and financial environment. Value investing is an essential tool for that. Retirement, your child's tuition or similar goals are not things that can be risked. Therefore, be patient, don't overcomplicate things

and think for yourself.

Chapter 10

Applying the analysis tools on Daimler

"Know what you own, and know why you own it"

Peter Lynch

Value investing Tools application on Daimler

In order to find the best business/stock where applying the tools discussed in part 2 would really provide you with the most value possible, I had to look for companies that have volatile revenues and consequently volatile stock prices but stable business and a strong brand that creates value over the long term. Not all of the tools can be applied to all companies. For example, it is impossible to apply the CAPE ratio on a stock that just went public and has only 3 years of financial history. However, the complete set of tools covers all kinds of companies but to apply as many tools as possible in order to provide the best possible example I had to look at complex companies.

A company I found that would be extremely interesting to analyze is Daimler, the global car manufacturer. I will discuss the company by analyzing its 2016 annual report which is easily downloadable at Daimler's investor relations page[7]. In the below analysis, next to the analyzed information from the Annual report I have put the exact page number from the Annual report to make it much easier to follow the example. Though it is not necessary to follow the annual report while reading this part, it would definitely provide a better learning experience.

The point of the below exercise is that you develop a methodology to analyze companies that will allow you to easily compare them and see which the best investments at that point in time are. The discounts, fair value estimates, liquidation values, future earnings, default rates and all the other factors necessary to analyze such a company can only be educated guesses. The key is to guess always by using the same criteria.

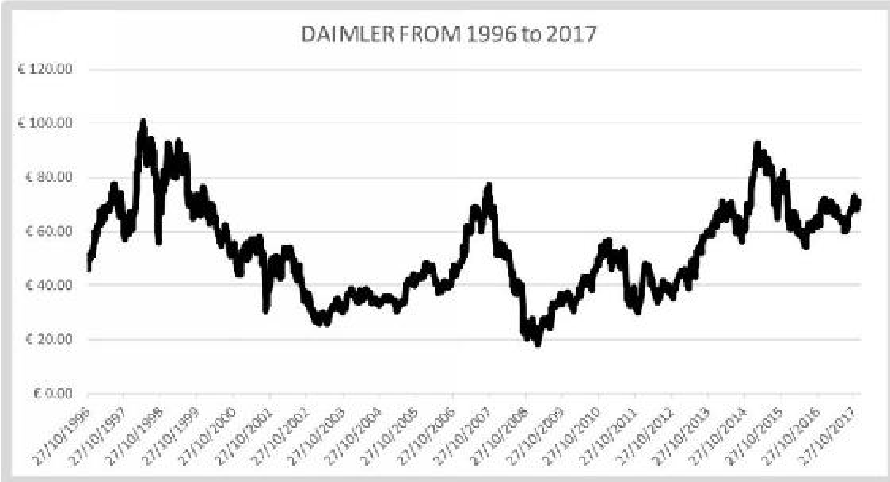
Daimler's intrinsic values

TOOL #1 - Use a range of values

Daimler's price at the time of this analysis is €77.5 while the analysts' recommended prices vary from €55 to €90 with two sell ratings, one underperform, fourteen hold ratings, seven outperform and six buy ratings. As always, analysts' recommendations are not far from the actual stock price and not really related to the long term intrinsic value of a company which we are going to estimate. Nevertheless, a look at Daimler's historic stock price will show how whatever value we derive, it won't be unlikely to see the stock reach that level sometime in the future as the historical volatility is extreme.

Nevertheless, the analysts' range of target prices from €55 to €90 shows how we too have to always use ranges when analyzing a stock because precision is impossible to reach. At the end of this example I will summarize all the findings in a table, but for now the first tool is about thinking in ranges and not precise values.

Figure 34 Daimler's stock price since 1996



Source: Author's data

TOOL #2 Net present value calculation (NPV)

Considering the previous tool, there will be plenty of net present values derived from Daimler. The following tables will show the various NPV calculations depending on the assumed discount rate and earnings growth.

The first thing to do in a net present value calculation is to estimate an appropriate discount rate. The academic way to do this is to add two percentage points to the country's risk-free rate of where the company is operating. However, Daimler's sales are 40% Europe, 25% China, 14% U.S. and 18% from the rest of the world. Given that Europe has variegated interest rates (from negative in Germany to 12% in Turkey) and as interest rates vary across the globe, an average discount rate has to be applied. At the end it boils down to the return you expect from your investment. The higher your available returns are elsewhere, the higher the discount rate will be and the larger the margin of safety will be. Given the cyclicality of the automotive industry and the global exposure, let's put a discount rate of 10% on future earnings.

The second thing to do is to estimate earnings growth. By looking

at a few market forecasts, from McKinsey to IHS Markit, I have found the expected global automotive industry growth rate to be in the range of 1.5% to 2.6% over the next decade. If I apply the lower range growth rate and the 10% discount rate onto Daimler's current earnings per share of €8.85 I get a present value of €67.24.

Table 8 Daimler’s NPV with a 1.5% growth rate and a 10% discount rate

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Earnings per share (1.5% growth)	€ 8.85	€ 8.98	€ 9.12	€ 9.25	€ 9.39	€ 9.53	€ 9.68	€ 9.82	€ 9.97	€ 10.12	€ 10.27
Discounted to PV (10%)	€ 8.85	€ 8.17	€ 7.54	€ 6.95	€ 6.42	€ 5.92	€ 5.46	€ 5.04	€ 4.65	€ 4.29	€ 3.96
Sum of present values	€ 67.24										
Current stock price	€ 77.50										
Net present value	-€ 10.26										

Source: Author’s calculation

If I adjust the growth rate to 3% and the discount rate to 5%, the net present value becomes positive.

Table 9 Daimler's NPV with a 3% growth rate and a 5% discount rate

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Earnings per share (3% growth)	€ 8.85	€ 9.12	€ 9.25	€ 9.39	€ 9.53	€ 9.67	€ 9.82	€ 9.97	€ 10.12	€ 10.27	€ 10.42
Discounted to PV (5%)	€ 8.85	€ 8.68	€ 8.39	€ 8.11	€ 7.84	€ 7.58	€ 7.33	€ 7.08	€ 6.85	€ 6.62	€ 6.40
Sum of present values	€ 83.73										
Current stock price	€ 77.50										
Net present value	€ 6.23										

Source: Author's calculation

Now, let me assume there will be a global recession in 2020 that will lower Daimler's 2019 earnings by 50%, 2020 earnings will be negative, with 2021 earnings positive similarly to 2019 and a return to normalcy from 2022.

Table 10 Daimler’s NPV with a 1.5% growth rate, a 10% discount rate and a recession

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Earnings per share (1.5% growth)	€ 8.85	€ 8.98	€ 4.50	-€ 4.42	€ 4.75	€ 9.53	€ 9.68	€ 9.82	€ 9.97	€ 10.12	€ 10.27
Discounted to PV (5%)	€ 8.85	€ 8.17	€ 3.72	-€ 3.32	€ 3.24	€ 5.92	€ 5.46	€ 5.04	€ 4.65	€ 4.29	€ 3.96
Sum of present values	€ 49.98										
Current stock price	€ 77.50										
Net present value	-€ 27.52										

Source: Author’s calculation

The present value is now much lower at €50. What is interesting is that Daimler’s stock price did reach that level in 2016 and was constantly below that level prior to 2013. This shows how the patient value investor will sooner or later see the stock price reach his required value and that there is no point in chasing a stock as a recession is always around the corner.

If you allow me to be even more conservative and estimate another recession in 2026, Daimler’s present value falls to €40.

Table 11 Daimler’s NPV with a 1.5% growth rate, a 10% discount rate and two recessions

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Earnings per share (1.5% growth)	€ 8.85	€ 8.98	€ 4.50	-€ 4.42	€ 4.75	€ 9.53	€ 9.68	€ 9.82	€ 5.00	-€ 5.00	€ 5.00
Discounted to PV (10%)	€ 8.85	€ 8.17	€ 3.72	-€ 3.32	€ 3.24	€ 5.92	€ 5.46	€ 5.04	€ 2.33	-€ 2.12	€ 1.93
Sum of present values	€ 39.22										
Current stock price	€ 77.50										
Net present value	-€ 38.28										

Source: Author’s calculation

The point of this exercise is to show how stock valuations fluctuate enormously and depend on the variables inputted by the analysts. However, the good news is that stock prices usually fluctuate even more. The NPVs calculated above should be compared to NPVs of other companies received from using an equal methodology and assumptions. The discount rate and years of estimate earnings used depend on your required returns and risk appetite.

Further, if you follow many stocks, at some point in time one of the followed stocks will definitely become a bargain under a conservative NPV calculation. If all become a bargain, then the above tool will provide an excellent comparative analysis.

If you prefer to use 20 years of future earnings or a final value after year 10, your NPV calculations will be different and a bit higher but at the end it comes to which investment has the largest margin of safety. The goal of this exercise is to show how it is all relative and that one can’t really expect precision.

TOOL #3 - Liquidation value

It is difficult to imagine a company like Daimler liquidated but then again, all these tools are part of a valuation package and even if there is little chance that a company like Daimler will ever go into liquidation, its liquidation value will provide interesting views, especially in comparison to other investments. The place to start when calculating liquidation value is the balance sheet.

We have to analyze each account and estimate its value in a liquidation. The best place to find information about each individual account is the annual report. Many corporations provide detailed

descriptions for each account which is an excellent way of seeing what is behind the number on the balance sheet (page 220). We'll start with non-current assets, continue with current assets and finish with the liabilities.

Table 12 Daimler's asset side of the balance sheet for 2016

DAIMLER balance sheet	In millions of euros
Assets	December 31, 2016
Intangible assets	12,098
Property pland and equipment	26,381
Equipment on operating leases	46,942
Equity-method investments	4,098
Receivables from financial services	42,881
Marketable debt securities	1,100
Other financial assets	2,899
Deferred tax assets	3,870
Other assets	667
Total non-current assets	140,936
Inventories	25,384
Trade receivables	10,614
Receivables from financial services	37,626
Cash and cash equivalents	10,981
Marketable debt securities	9,648
Other financial assets	2,837
Other assets	4,962
Total current assets	102,052
Total assets	242,988

Source: Daimler, 2016 Annual report page 220

Non-current assets

1) Intangible assets (€12.1 billion)

Daimler is using the IFRS (International Financial Reporting Standards) conservative German accounting system where it has almost no goodwill. From Daimler's 2016 annual report I have found the following (page 117): Intangible assets of €12.1 billion (2015: €10.1 billion) include €8.8 billion of capitalized development costs

(2015: €7.8 billion) and €1.2 billion of goodwill (2015: €0.7 billion).

We can impair the goodwill and also the development costs which are mostly related to the development of new car models, as in the case of a liquidation, there is little chance of the company producing more cars. Therefore, the liquidation value of the intangible assets in the form of development costs for new cars would be zero. There is always the possibility for the designs and plans to be sold, but as always, keep it conservative.

2) Property plant and equipment (€26.4 billion)

Daimler's property plant and equipment (page 245) account shows a value of €26.4 billion. However, the cost value is €72.2 billion while depreciation accounts for €45.8. Given that buildings often appreciate in value through time but are constantly depreciated we could estimate there could be more value in Daimler's property plant and equipment than what is reported. As equipment is depreciated faster than property and Daimler invests less than €5 billion in new equipment per year, we can assume that the largest part of value in Daimler's property plant and equipment account lies in properties. Therefore, as a conservative measure we can use the €26.5 billion as a fair value. Perhaps the fair liquidation value is higher than that but we should stay conservative.

3) Equipment on operating leases (€47 billion)

In case of a fire sale, the equipment on operating leases (€47 billion) would have to be sold at a discount. A recession would also probably lower its value as the resale value would be lower due to less demand for cars and trucks. Therefore, a 20% discount to the value would be proper, giving a value of €37 billion. In case of a crisis like 2009 then a 40% discount would be more appropriate.

4) Equity method investments (€4 billion)

The equity method investments show the value of the investment stakes Daimler has in other companies but where it isn't the controlling party. A look at page 302 and the statement of investments in the 2016 annual report shows that Daimler owns 10% of BAIC

Motor Corporation which is listed on the Hong Kong stock exchange and has a market capitalization of €8.4 billion which means Daimler's stake is worth €840 million. Daimler owns many more similar investments that are not quoted but in case of a recession the value of such investments in a cyclical industry could go for as little as 50% of book value. An example of such a risky holding is There Holding B.V. (THBV) which was founded in 2015; Daimler, Audi and BMW each hold 33.3% of the shares of this company (page 237). Each of the shareholders provided a capital contribution of €668 million. Despite the capital contributions and market value, I would still discount the whole equity method investments account by at least 50% and give it a liquidation value of €2 billion.

5) Receivables from financial services (€43 billion)

In order to leverage on their business and sell more cars, automotive companies have been giving loans directly to customers since the 1980s. Daimler Financial Services finances almost 50% of all the vehicles sold by Daimler. In case of a higher number of customer defaults, which is usually the case in a recession, in addition to potentially higher interest rates, the liquidation value of the financial services portfolio could be significantly lower than the book value. Even in 2016, which was an excellent economic year, the impaired receivables were 2.4% of total receivables (page 251). Therefore, to be conservative I would discount the account by 25% which makes it €32 billion.

6) Marketable securities (€1 billion)

Marketable securities are easy as liquidated and accounted for at market value.

7) Other financial assets (€3 billion)

Other financial assets include smaller equity stakes in other companies. As was the case with the equity method investments, a 50% discount is appropriate.

8) Deferred tax assets (€4 billion)

Deferred tax assets are only valuable if there are future gains. In case of a liquidation, future gains are questionable and therefore the discount is 100%.

9) Other assets (€0.6 billion)

Other assets consist mostly of reimbursements expected from governments in relation to taxes which can be accounted for without a discount as it is expected that there is no risk in receivables from governments.

The estimated conservative liquidation value of the non-current assets is €101 billion, which is 28% less than the book value of non-current assets.

Table 13 Estimated liquidation value of non-current assets for Daimler

DAIMLER balance sheet	In millions of euros	In millions of euros
Assets	December 31, 2016	Liquidation analysis
Intangible assets	12,098	0
Property pland and equipment	26,381	26,381
Equipment on operating leases	46,942	37,554
Equity-method investments	4,098	2,049
Receivables from financial services	42,881	32,161
Marketable debt securities	1,100	1,100
Other financial assets	2,899	1,450
Deferred tax assets	3,870	0
Other assets	667	667
Total non-current assets	140,936	101,361

Source: Annual report 2016 and author's estimations

Current assets

10) Inventories (€25 billion)

Given that Daimler has a gross profit margin of 20%, the fair value of the inventories is already discounted. Nevertheless, a usual liquidation value for inventories is between 50% and 75%. Given that €25 billion of Daimler's inventories represent less than two months of sales and €18 billion is already in finished goods (page 253), we could expect that in case of a liquidation, there would be enough demand for the finished inventories. Therefore, I would apply a conservative 25% discount on Daimler's inventories which results in a value of €19 billion. Perhaps such a discount is too conservative but better to be wrong with a margin of safety than wrong with no margin of safety.

11) Trade receivables (€10.6 billion)

Only 70% of the trade receivables are neither past due nor impaired (page 253). Therefore, in case of liquidation a 50% discount should be appropriate given that 22% of receivables have already been impaired. This makes the liquidation value €5.3 billion.

12) Receivables from financial services (€ 37 billion)

These are equal to the receivables discussed above but due in less than 12 months. There is much less risk there and the asset would

definitely be snapped up by a bank. A 15% discount should suffice which makes it €32 billion.

13) Cash and cash equivalents (€11 billion)

Cash and cash equivalents and marketable securities are liquidated at 100% of their book value.

14) Other financial assets (€2.8 billion) and other assets (€5 billion)

Other assets consist mostly of reimbursements expected from the government in relation to taxes which can be accounted for without a discount as it is expected that there is no risk in receivables from governments, especially with current assets, thus due in less than a year.

The total estimated liquidation value for current assets is €84.7 billion or 83% of the book value. The total estimated liquidation value of all assets is €186 billion or 76% of book value.

Table 14 Book value and estimated conservative liquidation value for Daimler

DAIMLER balance sheet	In millions of euros	In millions of euros
Assets	December 31, 2016	Liquidation analysis
Intangible assets	12,098	0
Property pland and equipment	26,381	26,381
Equipment on operating leases	46,942	37,554
Equity-method investments	4,098	2,049
Receivables from financial services	42,881	32,161
Marketable debt securities	1,100	1,100
Other financial assets	2,899	1,450
Deferred tax assets	3,870	0
Other assets	667	667
Total non-current assets	140,936	101,361
Inventories	25,384	19,038
Trade receivables	10,614	5,307
Receivables from financial services	37,626	31,982
Cash and cash equivalents	10,981	10,981
Marketable debt securities	9,648	9,648
Other financial assets	2,837	2,837
Other assets	4,962	4,962
Total current assets	102,052	84,755
Total assets	242,988	186,116

Source: Author’s estimations

Let’s analyze the liabilities part which should be taken at face value, though there could be more issues there.

Liabilities

What is left to compare are the liabilities to the estimated liquidation value of Daimler’s assets.

Table 15 Daimler's liability side of the balance sheet for 2016

Daimler balance sheet	In millions of euros
Liabilites	December 31, 2016
Provisions for pensions	9,034
Provisions for income taxes	966
Provisions for other risks	6,632
Financing liabilites	70,398
Other financial liabilities	3,327
Defferred tax liabilities	3,467
Deferred income	5,559
Other liabilities	15
Total non-current liabilities	99,398
Trade payables	11,567
Provisions for income taxes	751
Provisions for other risks	9,427
Financing liabilites	47,288
Other financial liabilities	9,542
Deferred income	3,444
Other liabilities	2,438
Total current liabilities	84,457
Total liablities	183,855

Source: Daimler, 2016 Annual report page 220

In a liquidation you can usually take liabilities at book value, but there are some investing risks which are very important to mention. These risks are related to pension obligations and contingent liabilities.

Provision for pensions

The provision for pensions account shows the unfunded part of a company's future pension obligations. The provisions are derived by comparing the fair value of the assets owned in the respective pension

fund with the present value of the expected future liabilities. This means that the company has to use a proper discount rate to calculate the present value of its future pension liabilities. As we have already discussed in the net present value part, present values differ enormously in relation to discount rates. Therefore, if a company is expecting to achieve a return of 8% per year on its retirement funds in the next 20 years but in fact it achieves only 4%, the difference might have a huge impact on its finances.

In Daimler’s case the situation isn’t that severe as it uses a discount rate of 2.6% (page 261) which might be even too conservative in the long term. Therefore, we can account for Daimler’s pension liabilities at face value.

Another important thing to look at when analyzing liabilities and to prevent any surprises are contingent liabilities. Contingent liabilities are liabilities where a company guarantees another company’s liability. As long as it is unlikely that the other company will be unable to meet its liabilities, the guarantee (contingent liability) is not on the balance sheet. Therefore, before investing in *any* company it is important to check the annual report for contingent liabilities.

In Daimler’s case the total guarantees amounted to $1.7 billion which isn’t that significant from a broad company perspective (page 113).

We have finally arrived at the moment of finding Daimler’s liquidation value. The estimated liquidation value of the assets was €186 billion while the fair value of the liabilities is €183 billion. This means that in case of a liquidation, Daimler’s shareholders would be left with almost nothing or about €3 per share. This per se isn’t a bad thing as it also shows that Daimler is not keeping too much capital just for sake of keeping it and tries to be as efficient as possible by returning capital to shareholders in the form of a strong dividend.

Even if Daimler’s liquidation value is small I found it an interesting company to analyze. In the current financial environment, few companies will have significant liquidation values. Nevertheless, a

comparative analysis can be the tipping point for an investment decision. There is a big difference in risk if the liquidation value is €3 or -€30.

TOOL #4 - Stock market price

A look at what is going on in the sector is always a healthy thing as there might be better investments, or the whole sector might be in the same situation which then makes sector factors a bit more important than factors affecting an individual company. I have compared Daimler to the top five global automotive producers.

Table 16 Comparison of main global automotive manufacturers

Company	Toyota	GM	VW	Hyundai	Ford	Daimler
Price to sales	0.8	0.35	0.44	0.4	0.34	0.49
Price to book	1.22	1.48	0.84	0.58	1.58	1.27
Price to earnings	11	9	12	6	12	8
Net profit margin	6.77%	1.89%	3.04%	4.46%	2.86%	5.86%
Dividend	1.53%	3.71%	1.12%	2.91%	4.80%	4.60%
Debt to equity	0.58	1.59	0.74	0.72	2.95	0.97

Source: Annual reports

Daimler has an average price-to-sales ratio and price-to-book ratio. The price-to-earnings ratio is a bit lower while the net profit margin is the second highest. The dividend is also the second highest while the debt to equity is not that risky. From a broad perspective there really isn't something that separates Daimler from the rest of the pack. A cool design line might bump sales for a while and improve the financials which could be reflected in lower valuations as the market expects a return to the mean.

When such a comparison really shows that a company is severely undervalued and there is no real reason behind it, then you might be looking at a bargain.

TOOL #5 - Look at what could be the value of the company for a private owner

It is difficult to find a fair acquisition price in the automotive industry as most acquisitions happen when a company is in trouble. Think of Fiat saving Crysler, Ford selling Jaguar and Land Rover to Tata for a billion less than what it paid for them because the brands were unprofitable, or China's Geely 2009 acquisition of Volvo.

Nevertheless, when Volkswagen acquired the remaining 50% of Porsche's shares in 2012, the company was a profitable business with healthy margins. Porsche's 2011 revenue was €11 billion and net profits €1.4 billion (source: Porsche 2011 annual report). The price for 50% of the company was €4.46 billion for a total company value of

€8.92 billion which leads to a price-to-sales ratio of 0.81 and a price-to-earnings ratio of just 6.36. That might seem low, but those are the valuations in the cyclical automotive industry as the long-term investing risks are high.

By applying the same ratios to Daimler, the price to sales ratio would lead to a market capitalization of €124 billion while the price to 2016 earnings would lead to a value of just €55 billion. As always, when valuing a company, it's best to work with a value range. As I am writing this, the market capitalization is €78 billion which is above the net income private owner metric. We could expect that at a market capitalization below €50 billion, there would be takeover interest which would provide a margin of safety.

Nevertheless, by combining tool #4 and tool #5 we can see that industry earnings valuations are above what Volkswagen paid for Porsche while sales valuations are below, except for Toyota.

TOOL #6 - Measuring intrinsic value

The best approach to measuring intrinsic value is by using the three components method: past value, earnings value and return on invested capital.

1) Book value

The best indicator of past value creation is the stock's book value which is found by dividing shareholders' equity with the number of stocks outstanding. It is also good to check the dividends paid out in the past or buybacks made to see the capital returned to shareholders. Page 107 of the 2016 Annual report tells us that there were 1,069.8 million shares outstanding and page 220 that the total equity attributable to shareholders of Daimler was €57.9 billion. By dividing the equity with the number of shares we get to a book value of €54.12. This is different from liquidation value because it shows the accounting value of Daimler. The value to the private owner could be even higher as a big chunk of value can be attributed to the brand.

2) Earnings & expected future returns

Here we are going to combine tool #7 Return on invested capital (ROIC), tool #8 Growth as a component of value and tool #9 the cyclically adjusted price to earnings ratio (CAPE), to get to the intrinsic value of Daimler. Intrinsic value is about the present value of all future earnings; thus, we have to estimate future earnings and the three tools are the core for such an estimation. The CAPE shows the past average earnings and the ROIC shows the future expected growth coming from the business itself, while the general growth fills the shortcomings of both the CAPE and ROIC.

Let's start by looking at the cyclically adjusted earnings. The following table shows the past 10-year earnings for Daimler. 10-year earnings are essential because they indicate what future recession earnings will look like and what we can expect through full economic cycles.

Table 17 Daimler's 10-year earnings and average

Daimler's past earnings per share - AVERAGE = €5.07										
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
€ 3.81	€ 1.40	-€ 2.63	€ 4.28	€ 5.31	€ 6.02	€ 6.40	€ 6.51	€ 7.87	€ 7.97	€ 8.85

Source: Morningstar

As a value investor is always conservative, I would also adjust the above earnings as the period was characterized by historically low interest rates that strongly supported car sales. If and when interest rates change, purchasing cars will be a little bit less easy. Further, the current negative interest rates Daimler is paying on part of its debt certainly skew earnings.

Nevertheless, average earnings were $5.07. Given that we can expect one or even two recessions in the following decade, I will use the average earnings of the past 10 years as my basis for the estimation of future earnings. If we use the lower end of the expected global automotive industry growth rate of 1.5% on Daimler's earnings for the next 10 years, we get the following table.

Table 18 Daimler's expected future earnings based on past average earnings and conservative growth

Daimler's future earnings per share - BASIS = €5.07										
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
€ 5.07	€ 5.15	€ 5.22	€ 5.30	€ 5.38	€ 5.46	€ 5.54	€ 5.63	€ 5.71	€ 5.80	€ 5.88
2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
€ 5.97	€ 6.06	€ 6.15	€ 6.25	€ 6.34	€ 6.43	€ 6.53	€ 6.63	€ 6.73	€ 6.83	€ 6.93

Source: Author's calculations

Apart from the earnings, CAPE and future earnings estimation, we still have to estimate Daimler's value through its Return on capital employed.

3) ROIC

As Daimler can currently borrow at negative interest rates and lend that money to customers at extremely low rates, its ROIC is extremely low but in line with the growth of 1.5% that we estimated.

Table 19 Calculation of Daimler's ROIC

DAIMLER (millions €)	2017
Average 10y net income	€ 5,004
Short term debt	€ 56,830
Long term debt	€ 99,398
Stockholders' equity	€ 59,133
ROIC	2.32%

Source: Author's calculations

Using 2016 earnings and not the historical average would increase the ROIC to 3.96% but that wouldn't be that conservative. So, we can expect Daimler to compound its capital at 2.3% in the future. Given that total capital (equity, long and short term debt) is €215 billion, we can expect profits of around €5 billion per year (2.3% of €215 billion) and consequently earnings growth at about 2.3%. This is very much in line with the average earnings estimated in relation to the automotive industry growth estimated in the above scenario.

4) Calculation of the intrinsic value range

The intrinsic value now depends on the discount rate or to make it even easier, on the valuation attached to future expected earnings. As I am writing this, the current price to earnings ratio for Daimler is 7.88 while the CAPE ratio is 14.02. The intrinsic value here becomes a totally personal matter. If you want investing returns of 10% per year you are going to attach a valuation of 10. 20% returns require a valuation of 5 and 5% returns a valuation of 20. Let's calculate our intrinsic value with a valuation of 10 that would also translate in a discount rate of 10%.

Table 20 Daimler's current and future intrinsic value leading to a 10% earnings yield assuming 100% earnings payout

Intrinsic value of Daimler based on a valuation of 10											
YEAR	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
EARNINGS	€ 5.07	€ 5.15	€ 5.22	€ 5.30	€ 5.38	€ 5.46	€ 5.54	€ 5.63	€ 5.71	€ 5.80	€ 5.88
STOCK PRICE	€ 50.70	€ 51.46	€ 52.23	€ 53.02	€ 53.81	€ 54.62	€ 55.44	€ 56.27	€ 57.11	€ 57.97	€ 58.84
YEAR	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
EARNINGS	€ 5.97	€ 6.06	€ 6.15	€ 6.25	€ 6.34	€ 6.43	€ 6.53	€ 6.63	€ 6.73	€ 6.83	€ 6.93
STOCK PRICE	€ 59.72	€ 60.62	€ 61.53	€ 62.45	€ 63.39	€ 64.34	€ 65.30	€ 66.28	€ 67.28	€ 68.29	€ 69.31

Source: Author's calculations

Similarly, the intrinsic value can be calculated by summing up the present values of future earnings.

Table 21 Daimler's intrinsic value using a 10% discount rate

Intrinsic value of Daimler based on a 10% discount rate and 20 years											
YEAR	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
EARNINGS	€ 5.07	€ 5.15	€ 5.22	€ 5.30	€ 5.38	€ 5.46	€ 5.54	€ 5.63	€ 5.71	€ 5.80	€ 5.88
PRESENT VALUE	€ 5.07	€ 4.68	€ 4.32	€ 3.98	€ 3.68	€ 3.39	€ 3.13	€ 2.89	€ 2.66	€ 2.46	€ 2.27
YEAR	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
PRESENT VALUE	€ 5.97	€ 6.06	€ 6.15	€ 6.25	€ 6.34	€ 6.43	€ 6.53	€ 6.63	€ 6.73	€ 6.83	€ 6.93
STOCK PRICE	€ 2.09	€ 1.93	€ 1.78	€ 1.64	€ 1.52	€ 1.40	€ 1.29	€ 1.19	€ 1.10	€ 1.02	€ 0.94
SUM - INTRINSIC VALUE		=					€ 54.43				

Source: Author's calculation

So, our intrinsic value calculation ended up being pretty precise with a book value of €54.12, valuation value of €50.70 and intrinsic value of €54.43. Getting to the intrinsic value of an investment is just one part of the game, the second is buying it with a margin of safety.

Investing with a margin of safety

The point of investing is not just calculating the intrinsic value, but also trying to buy with a margin of safety so that in case our intrinsic value calculations prove wrong, we don't lose money or at least limit the damage. The following tools help:

TOOL #10 - Cash per share

Cash per share is a tool to be used when the stock market is collapsing like it was the case in 2002 or 2009. When the market is doing well it will be practically impossible to find companies that trade at a price that is below net cash per share. Nevertheless, checking the cash per share shows how much stability the company offers and the actual creation of cash. As Munger and Buffett would say: "You want to invest in companies that are drowning in cash." Let's see how much cash Daimler has.

The 2016 balance sheet shows that Daimler has cash and cash equivalents of €10.8 billion (page 220). If we divide that number by the number of shares outstanding we get to a value of 1,069.8 million shares outstanding (page 107) we get to a cash per share balance of €10.1, this is more than 13% of the stock price which can lead to interesting conclusions. The cash can be used for acquisitions and investments or it can be distributed to shareholders.

Another thing that can be done is to add the short marketable securities that Daimler owns, as those can be quickly converted to cash. The account shows €9.6 billion or €8.98 per share. By combining the two we get to a value of €19.1 per share or more than 26% of the stock price which is a significant amount. The question is always how will that cash be used? As long as the usage is useful it is ok, more cash gives a larger margin of safety to the stock as the management can increase the dividend and there is less risk for dividend cuts.

TOOL #11 - Dividend sustainability

To check the sustainability of the dividend we have to see what the

current cash per share is, as well as the yearly created cash flows. In Daimler's case, the 2016 cash per share was €10.1 as shown in the previous exercise.

Daimler's net income for 2016 was €8.4 billion while the dividend of €3.25 per share required €3.47 billion to be paid to shareholders. From the 2016 perspective the dividend seems sustainable as there is enough cash per share for almost 3 years of dividends while the dividend payout ratio is just 34%.

However, there is also the long-term dividend sustainability where one has to look at what can happen to the company's cash flows if a recession happens. As Daimler's dividend is just 2.3% of revenue, any kind of revenue shock, even if small, would put the dividend in jeopardy. For example, Daimler didn't even pay dividends up to 2012.

So, in the short term the dividend looks sustainable but the first shock might make in questionable which could lead to a significant market price drop that will create opportunities for the patient value investor.

TOOL #12 - Determining a business moat

This is simple with Daimler: There is no business moat. Yes, Daimler makes part of the luxury automotive sector and has a strong brand, but anyone can compete with it and we have already seen how Tesla entered the luxury sedan market and is disrupting the electrical vehicle environment which forced Daimler to speed up their electrical plans and invest a significant amount of money.

TOOL #13 – Use what none of the great investors had before 1998 – Google

I just typed 'Daimler scam' into Google and found some very interesting information such as a recent Fortune article titled 'Daimler Summoned Over Diesel Fraud Claims' and a Telegraph article titled 'Daimler recalls millions of diesel cars over harmful emissions'. These two pieces of information that came up on the first page of a Google search alone can save you from making many investment mistakes. We cannot say that Daimler isn't under the risk of Dieselgate issues

like was the case for Volkswagen in 2015, or that there won't be any other expensive recalls. Such information helps to put things into perspective. The potential for costly scandals lower Daimler's margin of safety.

TOOL #14 - Analyzing the quality/integrity of the management

A great way to analyze the management is to go and read an old annual report or to find an old investor presentation which can be found on the company's investor relation site. For example, I found a 2013 presentation with a concise explanation of Daimler's targets up to 2020[8]. One of the management's targets was to reach a 10% strategic return on sales. In 2017, with the global economy roaring and negative interest rates for the company in Europe, the return on sales is still at 6.5% which shows that the management's goals should always be taken with a grain of salt.

TOOL #15 - Activist investors can be considered a margin of safety

Some activist investor might be attracted by Daimler's cash pile and current low valuation but it would be very hard for anyone to get on Daimler's Board given that 77% of company is owned by institutions of which 34% are German and probably strongly related to domestic politics which is why we haven't seen many attempts of activism and Daimler.

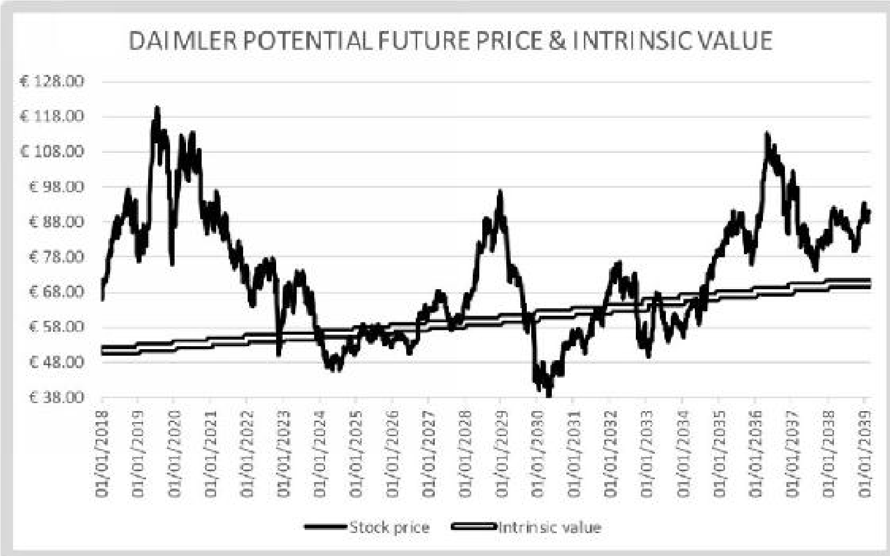
TOOL #16 - It all boils down to the price you pay

The best way to explain investing with a margin of safety and the importance of the price you pay is by taking the intrinsic values from table 11 and plot it against possible future stock prices. I have replicated Daimler's stock price fluctuation from the past 20 years into the future from the current level and compared it to the intrinsic values we have calculated.

The point of margin of safety investing is to invest in a company when there is a significant margin of safety in relation to its intrinsic value. If Daimler's stock price replicates its past path, a value investor would have the opportunity to buy the stock at a 20% discount in

2024, at a 35% discount in 2031 and at a 25% discount to intrinsic value in 2033.

Figure 35 Daimler's potential stock price and future intrinsic value



Source: Author's estimations

By investing only when there is a discount you limit your risk and increase your returns. The key is to be patient and to follow a significant number of stocks. The more stocks you follow, the higher the required discount when you invest can be, just as the bigger is the chance of finding bargain stocks with a margin of safety to intrinsic value over time as there are big differences in price fluctuations across individual stocks, sectors and countries.

Sector analysis

So, we have calculated the intrinsic value, discussed the margin of safety and we are not yet finished. It is important to also analyze the external factors that can impact the value of a company.

TOOL #17 & TOOL #18 - Analyze the cyclicality of a sector

As the automotive industry cycle is strongly related to the natural economic cyclicality I will combine tools #17 and #18 in this discussion. The cyclicality of a company is extremely important because, like it or not, most investors and analysts tend to replicate the current environment into the future when analyzing a company. This means that a company that usually has strong earnings, like Daimler, during economic expansion, could be defined as a terrible investment in a recession because analysts usually look at the temporary losses and replicate those in their models. Daimler's stock price went below €20 during the 2009 financial crisis because analysts were focusing on the net loss of €2.6 billion in 2009 instead of focusing on the long-term strength of the company.

As recessions will always come because the economic environment is such, make sure to think about how the analyzed company will be perceived by the market in such a scenario. Perhaps you will have the possibility of buying the stock at incredible discounts to intrinsic value. It is incredible how much volatility there is in financial markets when you take a decade long perspective on valuations, stock prices and intrinsic values. In the case of Daimler, there is always the potential for the stock to drop at least 50% in a market crash, something to keep in mind.

Is Daimler a value trap?

TOOL #19 - Look for catalysts

If we assume that there is value in Daimler, what would be the catalysts that would unlock that value? From a price earnings perspective the company is severely undervalued at this point in time with the dividend being double what the market offers. (DAIMLER PE = 8, Dividend = 4% - S&P 500 PE = 26, Dividend = 1.8%)

The issue with Daimler is that most expect a recession in the next few years that will severely impact both Daimler's earnings and dividend. The electrical vehicle catalyst is not really a catalyst because Daimler is going to have huge capital expenditures to develop new models, create the infrastructure to build them and then sell them in an already highly competitive environment.

One catalyst that could unlock some of Daimler's value is lower corporate profit taxes in the U.S. The company expects lower taxes to have a benefit of €1.8 billion[9] on net income which could translate into an even higher dividend and push the stock price higher.

The important thing when looking at catalysts is to find investments where what can go wrong is limited, while the positive side is unlimited. At this point with Daimler, a looming recession really weighs on the risk/reward scenario.

TOOL #20 - Avoid secular declining sectors

Well, fortunately here, the automotive industry is expected to grow in the future as demand coming from emerging markets continues to increase alongside economic growth. However, if the sharing economy booms, which is unlikely at the moment, there could be a slowdown in demand for vehicles.

TOOL #21 - Looking at significant insider activity

The German webpage finanzen.net shows no significant insider activity with Daimler. Further, the Daimler Group has a Performance Phantom Share Plan (PPSP) outstanding (page 255 of 2016 annual report) where the management is compensated in cash, not shares. A

cash compensation shows how there is no significant insider activity nor holding for Daimler, on the contrary, the liabilities for managerial pensions are large and could lead to the question of whether the management is incentivized to push the stock price as high as possible in the short to medium term, or is it really focused on long term shareholder creation? Sometimes the short and long term go along, but sometimes they really diverge.

TOOL #22 - Sustainability of the dividend

The sustainability of the dividend depends mostly on whether there will be a recession. However, as a new recession will always come, those who look to invest in cyclicals might really want to do so when the stock price falls significantly below the intrinsic value during a bear market and a recession. Daimler's stock fell more than 70% in the last two recessions with bear markets so we can expect something similar in the future.

TOOL #23 - Determining market sentiment

In the current environment (end 2017), market sentiment is extremely positive.

Figure 36 Daimler's stock price from 2013 to end 2017

Source: Author's data

However, what is noticeable from the above chart is that the market's sentiment has huge swings. In April 2013, Daimler had a stock price of €39, which jumped to €71 in April 2014, only to fall to €56 in October 2014 and go up to €93 in March 2015. A 45% decline followed up to June 2016, with a subsequent 40% increase, followed by yet another 20% decline and increase. Given the sensitivity of Daimler's stock price to market sentiment, you might as well wait for the stock price to be significantly below the intrinsic value and with a large margin of safety.

TOOL #24 - Quality of assets on the balance sheet

We have already analyzed the asset side of Daimler's balance sheet when calculating liquidation value but another check is necessary from an industry perspective. Given the high depreciation, we could say that there won't be any surprises with Daimler's assets. The liabilities are also fair as the pension liability discount rate used is extremely low.

Summing it all up

The point of it all is to get a clear idea of what the value is and when to invest with low risk. The following table summarizes the findings.

Table 23 - Summary of applied tools

TOOL	Value	TOOL	Descriptions
Range of analysts' values	€55-€90	Cyclicality	Strong
Present values	€49-€83	Catalysts	Taxes
Liquidation value	€3	Sector	Growth
Private owner	€50-€120	Insider	None
Intrinsic value	€50-€54	Dividend	Cyclical
Cash per share	€10-€19.1	Sentiment	Strong (bad)
Trust in management	50%	Business moat	None
Potential future price	€38-€50	Google	High risk
Conclusion: Wait for recession and 20% to 40% margin of safety			

Source: Author's data

The fair value of Daimler would be around €50 for a very conservative investor expecting a long term earnings yield of 10%. The cash per share could add €10 to the €50 where the fair value would then be €60. However, given the cyclicality, dividend risk, sentiment risk, no business moat and the omnipresent risk of a scandal, one should wait for a significant discount to intrinsic value. Thus, at €40 Daimler would become an interesting investment for a value investor giving a low margin of safety and potentially leading to a double-digit return.

However, this does not mean that as soon as Daimler hits €40 it automatically becomes a buy as there would be a 20% discount to intrinsic value. If and when that happens, the stock has to again be compared to other market opportunities. The opportunities with the lowest risk, biggest discount and most probable catalysts have to be picked for profitable long term value investing.

BOOK 3

Beyond value investing

Chapter 11

Portfolio activities

"The challenge of successfully managing an investment portfolio goes beyond making a series of good individual investment decisions"

Seth Klarman

For now, we have covered the logic and the necessary mindset to be a value investor in book one, and the key tools in book two. In the second part of book two we applied these tools on Daimler, and book three might come as a surprise. Book 3 is here to emphasize that the modern intelligent investor has to look at many more things than just value investing. If we want to reach our financial goals in the current environment there are many other concepts that can lower our investing risk and increase our returns which are not really core value investment tools but regularly used by the world's most famous value investors, from Buffett to Klarman. This part includes how a value investor should approach trading, portfolio rebalancing, when a position should be sold, cash flow management, temporal diversification, an all-weather portfolio, investing in gold and, to finish, my personal investing story which I hope you will find inspiring. The point of this chapter is to lower one's risk while increasing potential returns. You will see that this topic recurs in the chapters.

Portfolio Management & Trading - The Value Investing Way

"By relying on the decisions of others to drive portfolio choices, investors fail to take responsibility for the most fundamental fiduciary responsibility—designing a portfolio to meet specific goals." David Svensen

Each of us has different investing goals and investment horizons. In addition to this, our risk appetite is different, the financial instruments used for analysis also vary, etc. Therefore, apart from finding a proper value investment, it is important to emphasize appropriate portfolio management by introducing something controversial to value investing, which is trading.

It's impossible to manage a portfolio without occasional trading. Investments change all the time, fundamentals can change, a stock price can increase, or interest rates can change. This makes the investment process a constant as investors have to balance between appropriate diversification, hedging decisions, managing portfolio cash flow, and liquidity. Even Warren Buffett constantly trades and rebalances his portfolio in search for the best risk reward positions.

Looking to gain from stock price movements isn't what a value investor intends with trading. To a value investor, trading means to have appropriate liquidity, managing portfolio risk through proper diversification and rebalancing across the portfolio and sector exposures.

How Important Is Portfolio Liquidity?

Proper compensation should be required for an illiquid investment. An illiquid investment is one where there is a significant cost attached to closing the position. Liquidity allows us to change our minds and sell when we no longer think of the investment in the same way. Buying an illiquid asset doesn't offer the opportunity to sell. Therefore, the longer the expected illiquid period is, the higher the compensation for

illiquidity should be because the more time there is, the more things can go wrong with an investment, i.e. the risk is higher. For example, venture capital investors are faced with an illiquid period of uncertain duration and with an uncertain outcome for the venture.

Apart from portfolio liquidity, it's also very important to think about the general market's liquidity. When the markets are stable, it's usually not a problem to sell or buy something. However, when the market panics, the liquidity that was present in the bull period quickly evaporates as sellers rush to sell while buyers wait for the price to get even lower. To avoid getting trapped in an illiquid investment, it's important to know your liquidity limits and invest accordingly.

There are several ways to deal with portfolio liquidity. Constantly adding new funds to one's portfolio certainly helps as it enables an investor to hold onto certain illiquid investments that still have to appreciate, and allows to not miss new investment opportunities, thus lowering the opportunity costs. Additionally, long term investors can certainly hold on to illiquid investments without too much stress, but they definitely have to demand a high reward for the illiquidity.

Reducing portfolio risk

Investing isn't just about finding good investments. Of equal importance is portfolio diversification, proper hedging, and the management of portfolio cash flows. Each investment carries its own degree of risk. However, the goal of portfolio management is to lower the total risk of the portfolio, even if the risk of the individual investments is higher.

Appropriate diversification

Appropriate diversification certainly helps to lower one's portfolio risk. It isn't necessary to hold a huge number of securities as ten to fifteen different holdings usually suffice for proper diversification.

Most value investors like Buffett and Klarman are against over-diversification and index funds as they think that knowing a lot about a few stocks is much less risky than knowing a little about many stocks. Buffett's famous statement is that one's best idea is likely to

provide higher returns for the same level of risk than one's hundredth idea. Diversification can be further improved by holding uncorrelated assets and assets that are ok investments now but would significantly benefit from a change in the economic environment. More about that later on, in the all-weather portfolio chapter and when we talk about gold miners.

The importance of trading

The only thing important to the value investor is the price. As we know, the market is irrational and sometimes overpays for a stock while sometimes there exists the opportunity to buy something extremely cheaply. A value investor has to trade in order to take advantage of such opportunities.

The best way is to have a straightforward table with the owned and followed investments that can be adjourned quarterly. Consequently, a value investor can lower his position with the stocks that have become riskier because the fundamentals remained the same but the stock price increased and he can increase or start a position in other stocks that are better bargains. To carefully assess what is going on, a value investor has to stay in touch with the markets and follow what happens.

As trading is the opposite of what many long-term investors advise, staying in touch with the market contradicts value investing philosophy. Nevertheless, following what is going on in the markets doesn't mean trading on every uptick. Staying in touch with the market means taking advantage of the opportunities arising from the market's irrationalities.

As we never know what will happen on the stock market it is wise to never buy a full position in a stock all at once. Buying a whole position in one buy might force you to helplessly watch the stock further decline while you don't have any more buying power. Buying in small stakes allows the investor to average down in declining markets. As the stock recovers you can sell the positions you acquired over time at a higher level in order to manage your portfolio risk and book a small profit. Over the long term those small trading profits

around the margin of safety compound to amazing investing returns.

Averaging down is opposite to what most traders would advise, they'd instead tell you to sell the losers fast and stick to the winners. But when the fundamental value analysis of a stock shows it's a great investment, a real value investor is extremely happy to buy more when stock prices fall. If you feel reluctant to buy more, you have been speculating and probably shouldn't own the stock at all. Portfolio managing and trading leads also to the question of when to sell a stock.

When to sell a stock

"I made my money by selling too soon" Bernard Baruch

Buying is easy. When a stock trades at a significant discount to its intrinsic value, you can't go wrong because of the margin of safety. On the other hand, selling is a completely different story and one of the most difficult things when investing.

As a stock appreciates, the margin of safety diminishes, and the risk increases while the potential return decreases. However, you can never know whether the stock will go higher or not. A good rule to follow is that all investments are for sale at the right price.

The decision to sell is also influenced by what else is on the market at that specific point in time. If you find a great bargain, it would be wise to sell a stock that hasn't yet fully realized its value in order to exchange it for a better bargain. If there aren't many bargains around and a holding is still trading below its real value, then it doesn't make sense to sell.

Knowing when to sell allows you to lock your gains in when you are right, limit your losses when you are wrong, and, most importantly, avoid selling for a small gain when the stock has the potential to double or more.

Financial markets constantly change. Interest rates change, a company can suddenly positively or negatively surprise with earnings, a sector may face problems due to too much competition, or a country can enter a recession. On top of that, there are so many other things to account for that it would take writing a special book just to cover all the possible reasons to sell a stock. Nevertheless, I'll summarize the best strategies for when to sell a stock and hopefully give you new tools to lower your investing risk and increase your rewards.

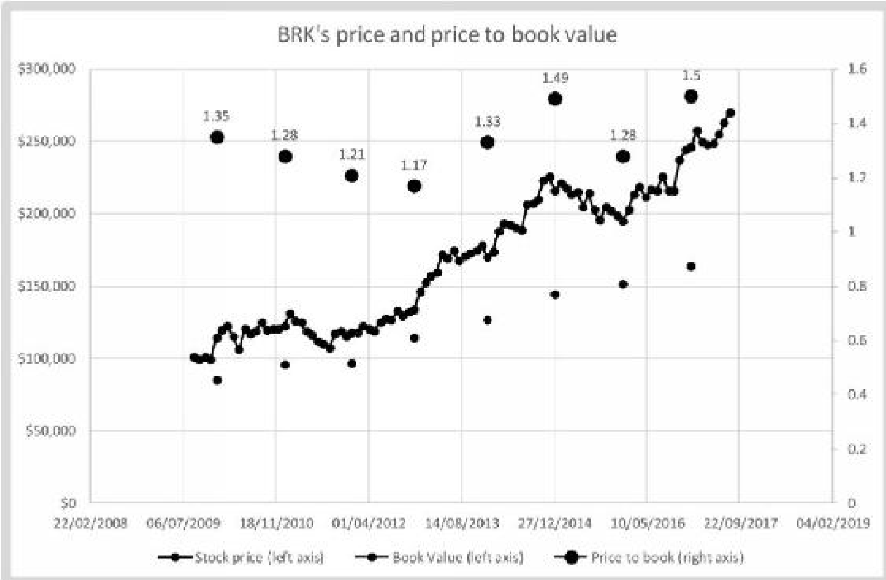
1) Always keep in mind the reason why you bought the stock in the first place

The easiest way to know when to sell a stock is by keeping in mind

why you bought the stock in the first place and then continue comparing fundamental developments with the changes in the stock price.

For example, let’s say you bought Berkshire Hathaway (NYSE: BRK.A, BRK.B) in 2010 because its price to book value was 1.35 and you considered it a safe investment as we all know that Buffett would immediately start buying back shares at a 1.2 price to book value. At that point, you said that no matter what, you would sell when the price to book value reached 1.5.

Figure 37 BRK's price and price to book value from 2010 to 2016



Source: Author's data

BRK's stock reached a price to book value of 1.5 in 2014. Thus, you would have sold only to buy back again in 2015 as the price to book value was again in your acceptable range. Toward the end of 2016, you would have sold again as the stock was again overvalued.

The easiest way to know when to sell is to compare how the fundamentals have changed in relation to the stock price. Various fundamental metrics can be used, from revenue growth, dividend yields, price earnings ratios, and other metrics that are independent to the type of stock you are buying. Nevertheless, this is a selling strategy that imposes discipline and limits risks.

It's easy for investors to get overexcited about a stock, not sell at the right moment, and lose all their gains and then some, but excitement should not be something to consider when dealing in value investing and managing risk. Thus, discipline is the key.

Apart from fundamentals, there could be other reasons to sell a stock. For example, there are some catalysts that should positively influence a stock in the next few months, like the launch of a new

product. If the product isn't what you or the market expected, it's ok to take a loss and sell because the circumstances have changed and consequently the intrinsic value is lower.

2) Portfolio rebalancing

If you own an all-weather portfolio, then the most important reason to sell or buy something is rebalancing. For example, the percentage of your portfolio exposure to gold assets jumps up because gold prices have increased. In such a case, it's essential to lower your exposure to such assets in order to keep your portfolio risk weights balanced. And, given the volatility that gold assets have, portfolio rebalancing is something you'd do often.

Another reason to rebalance is because you have too much risk in one stock. If you usually hold 10 stocks in your portfolio and balance the risks, then each stock should have a weight between 5% and 15%. If a stock that makes 10% of your portfolio doubles, then it would make 18% of your portfolio creating a larger exposure. Given the high proportion of risk in this one stock, it might be wise to trim the position since anything can happen, especially if such a large part of a portfolio is in one stock that has perhaps seen its stock price go up but has seen its fundamentals unchanged.

3) There is something better out there

The first two strategies explained in this article are pretty straightforward, but the third strategy is already a bit more complicated. Stock prices go up and down all the time and to be constantly trading your portfolio around just because this or that stock might look a bit better would lead to high transaction costs that would eat up all your returns.

However, I've found the best strategy related to this issue with the famous John Templeton. He would replace one holding in his portfolio only when another holding was 50% better than the first one.

For example, if there are two stocks where you think their true value is $100 while one is trading at $50 and the second at $40. By

dividing the $10 difference in price with the price of the cheaper stock, we can see that the second stock is just 25% cheaper. However, if the stock price of the second stock drops to $30, then the difference is $20 and it is now 66% cheaper than the first stock, thus it's good to sell the more expensive stock and buy the cheaper one.

A simple rule like Templeton's trading rule helps keep a cool mind and the discipline necessary to be a successful investor.

4) Using stop losses and trailing stop losses

For an investor to use stop losses, it has to be an inherent part of one's strategy because with stop losses you sometimes win and sometimes lose. The benefits of using an automated trading order if a stock price drops below a certain target is that you avoid larger losses if the stock price drops even more and you eliminate the psychological difficulty of actually selling something when it's falling.

On the negative side, the stock might be down temporarily, breaking your stop loss limit only to surge afterwards beyond your first entry point. In such a scenario, all you record is a loss while your initial strategy was correct.

Investors like Buffett and Klarman define using stop-losses as a crazy activity and not at all a risk limiting tool. According to Klarman, it's irrational to sell a holding when its price falls. If an investor bought the holding in the first place, based on proper value analysis, a new decline in price only means that it is a better bargain and averaging down will increase one's return. Letting the market decide when you should sell is totally crazy according to Klarman.

Nevertheless, use stop losses if they fit your strategy but remember that value investors don't use stop losses because they usually buy more when a stock price drops if they have made proper due diligence and only buy when there is a large margin of safety.

5) Selling because you have reached your goal

This is my favorite reason for selling and should be the happiest reason for when to part with stocks. If you have a goal to retire at a certain age and need a certain amount or you have been investing to

buy a house or take a trip around the world or you have reached the necessary funds to pay for your children's tuition, then it is wise to sell as the stock market's volatility can always surprise you. If the money is enough and the goals are close, let's say less than 5 years, it is opportune to sell, bring down the risks to zero and enjoy life.

Concluding the subject of portfolio management, proper portfolio management can really help take advantage of the market's irrational behavior by allowing us to buy when things are cheap and sell when they're fairly valued. Following the market allows us to properly diversify in order to lower our risks and increase our returns.

Chapter 12

Hedging and protection is also valuable

"If you are looking for a hedge for potential inflation for the future and have a longer term view, then gold is still a good bet."

John Paulson

Value investing and hedging

Market risk can't be mitigated by diversification, but can be lowered through hedging. What many fail to understand is that a hedge is an investment like any other. It has a value and a price. Whenever the value is below the price, it can be bought with a margin of safety. So, the same principle that applies to normal investments applies to hedges too. I'll describe a few ways a value investor can take advantage of various types of hedges by using a long-term value approach.

Before digging into the technical part, it is important to note that hedging is a very important, but often-omitted investing strategy. The principle of hedging is to own something that will go the opposite direction in relation to another asset class in a portfolio. Thus, protecting your portfolio from potential losses. For example, if you own an S&P 500 portfolio, buying a put option on the S&P 500 gives you security in the event that the market crashes as you won't lose anything because the value of the put option should appreciate at the same rate the S&P 500 declines.

The issue with hedges is that they usually aren't free, and often have an expiration date on them making them very expensive to maintain over longer periods of time. Nevertheless, a rational investor can find interesting investment/hedges by using a bit of common sense. The nice but tricky things with hedges is that they are usually extremely cheap during bull markets and economic expansions because nobody is thinking about hedging. An opportunistic value investor can even find free hedges in such situations.

1) Diversification as a hedge

The most common hedge is diversification, but diversification means owning uncorrelated assets. The public opinion about proper diversification is owning the S&P 500 while extreme diversification means owning bonds and stocks. The truth is that both stocks and bonds move in tandem, and opposite to interest rates. Since 1982, interest rates have been declining, pushing down the required returns

and, consequently, inflating most asset prices, from real estate to stocks and bonds. Therefore, if you want to grasp the benefits of diversification hedges, you should really look for uncorrelated assets. More about investing in uncorrelated assets in the all-weather portfolio chapter.

2) Hedging for financial and economic turmoil

As we all know, the economy and financial markets work in cycles which are usually fueled by debt. At some point, consumers and businesses over-leverage themselves, the cost of the debt becomes a burden, and economic activity slows down. Depending on the situation, an economic slowdown can have somewhere between mild repercussions to terrible repercussions.

The economic slowdown of 2008 had terrible repercussions as the whole global financial system was in turmoil. Given that since then central banks have constantly been adding liquidity to the system, the next financial crisis could be even worse and the only thing we can expect is that central banks continue to administer the same medicine they have been using, i.e., more money printing.

I call it “money printing,” but the formal name is quantitative easing, a practice that includes lowering interest rates, increasing credit, offering tax credits, and buying assets on financial markets.

It’s easy to conclude that in the next recession, central banks will do (to quote European Central Bank president Mario Draghi in 2012) “Whatever it takes” to keep the situation as it is. This predictability offers a great opportunity for the rational investor to be hedged against more money printing.

The best hedges against quantitative easing are assets that are fixed in supply like precious metals, fixed supply real estate like land, and commodities that have a fixed supply but stable demand.

Gold as a metal is very volatile in the short and medium term but in the long term, it correlates with the money supply. The price of gold has appreciated about 6 fold in the last 15 years, which is close to the FED’s balance sheet increase.

The above does not mean an investor should own only gold or hedges but merely points to the fact that keeping an open mind and looking at what can happen can increase returns and lower risks.

3) Hedging against inflation

A big surprise for economists was that the quantitative easing policies didn't lead to high inflation rates. Nevertheless, inflation is always around the corner and could show itself at any point in time. Further, inflation can show itself in various sectors without having a significant impact on the officially reported inflation rate, but it can have a significant impact on your expenditures. Think healthcare costs, tuition and real estate or stocks.

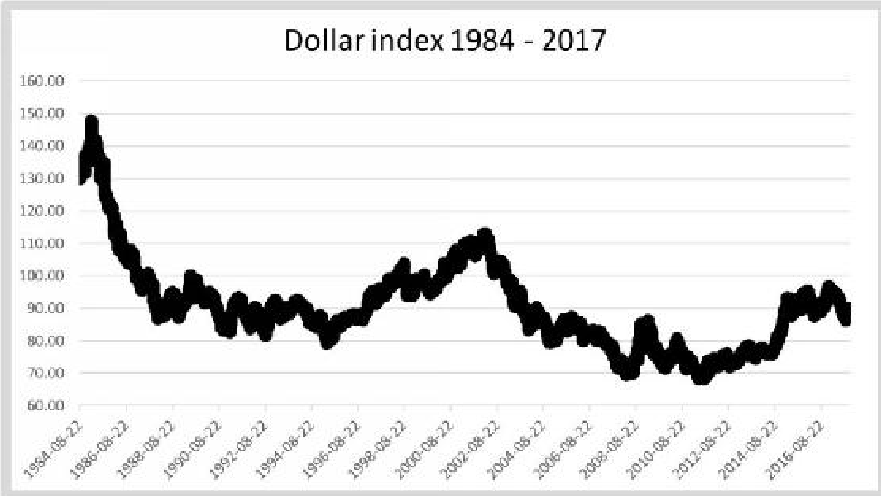
Inflationary hedges are similar to the hedges for quantitative easing. However, another excellent inflationary hedge is a fixed interest loan. Given that all governments have the goal of getting to an inflation rate of at least 2% with 3% being a good balance, a fixed interest long term loan would provide a great hedge for inflationary pressures, especially if the money is invested in hard assets with a stable safe yield that increases alongside inflation. This goes a bit beyond the scope of this book but it is good food for thought.

4) Hedging for currency risk

Most take their own currency for granted, but proper diversification includes currency hedges and exposures that even out through time. It's often overlooked, but the U.S. dollar has lost 40% of its value in comparison to a basket of major global currencies in the last 30 years.

As currencies usually move in cycles of a few years, the best strategy is to have a well-diversified international portfolio and then rebalance the weights according to the strength of the currency and the margin of safety within the investments.

Figure 38 The dollar index in the last 30 years has fallen significantly



Source: Federal Reserve Economic data

A strong dollar doesn't do well for the U.S. economy and sooner or later, it has an effect. Nevertheless, the rational investor can take advantage of the strong domestic currency and buy international assets on the cheap. Consequently, international assets have to be rebalanced when the foreign currencies look strong in the long-term cycle in relation to the domestic currency.

5) Liquidity hedges

We have already mentioned how a value investor always has a large cash cushion, but this too is a hedge. Cash is the ultimate hedge as it allows you to take action when a great opportunity shows itself. However, it takes a lot of patience to have a significant part of a portfolio in cash and the discipline to invest it only at certain levels of return.

For example, let's say the earnings yield of a well-diversified portfolio is now 10% and a rational investor has 25% of his portfolio in cash or short term highly liquid assets like T-Bills. If the earnings yield drops to 7.5%, the investor might want to increase their cash position to 35% or just keep it at 25% by selling some other relatively overvalued assets.

When the long term portfolio yield increases to 15% as often happens in stock market crashes, the rational investor could significantly lower his cash exposure in order to take advantage of the bargains available.

6) Using options as a hedge

Some say options are good, some think otherwise. But the main point is that it all depends on the price of the option. It often happens that an option to insure an investment is very cheap because the market thinks there is no risk in the given asset. That's usually the case when the asset is overvalued. So, a rational investor might use options in order to hedge a position that perhaps appreciated significantly in the past and is now overvalued. However, an option protects from the downside and can be a great insurance if it is cheap. The lower the market volatility is and the higher investors' complacency is, the cheaper the options are.

Selling put or covered call options when balancing one's portfolio is also a useful strategy in certain circumstances but that goes beyond the scope of this book.

To conclude the subject of hedges, a hedge is like any other investment and has to be approached the same way. It's important to understand the cost of a hedge and attach carefully calculated probabilistic outcomes to that hedge. When a hedging option seems cheap from a risk reward perspective of the individual portfolio, it isn't a crazy thing to take advantage of it.

Further, there can also be hedges that carry alpha. For example, I always have a gold hedge in the form of gold miners in my portfolio. But it's even better if I can find a miner that mines both copper and gold at low cost, or where the copper production is somewhere in the future and currently heavily discounted by the market. In this way, I'm protected both against financial turmoil with the gold and eventually also against inflation with the copper, even if gold prices stumble.

I firmly believe it's possible to create a well-hedged portfolio over time with every hedge having a margin of safety and creating value in

the form of a yield, be it a dividend from a low-cost gold miner or interest on foreign debt. Such a portfolio with proper rebalancing should bring about lower risk and higher rewards over the long term.

Chapter 13

Avoid value traps

"Staying small is simply good business. It wouldn't be fair to our customers if we had to spread our ideas too thin. There aren't that many great companies."

Bill Ruane

One of the biggest dangers for value investors are value traps. In 90% of the cases a stock is cheap for a reason. Therefore, I cannot stress the importance of this chapter and I hope it gives some ideas on how to protect yourself from value traps and the always attractive falling knives.

10 Rules for catching falling knives

"Never try and catch a falling knife. Wait for it to hit the ground then pick it up. The same applies to falling stocks."

All this talk about bargains and buying only something that trades for cents on the dollar usually leads investors to try catching falling knives. In addition to the things investors have to watch to avoid value traps, catching falling knives is a bit more complicated as it has to do a lot with both our and the market's psychology. I hope that this list of 10 rules helps you to increase your returns and lower risks by, if nothing else, preventing you from investing in companies that may seem like bargains but are going to become even better bargains.

A stock that has experienced a fast drop is usually called a falling knife. In a bear market, the whole market may become a falling knife. A stock can decline for multiple reasons, be it missed analysts' expectations, sector issues, accounting issues, negative investing sentiment, legal issues, or many other possible negative impacts.

The hope behind the catching-a-falling-knife strategy is to buy a security when it is oversold and the actual (intrinsic) value is much higher than the resulting stock price. This happens very often as investors are irrational and tend to overreact to negative news.

Our thinking is exclusive, which means that even one piece of negative information can put a cloud over a bunch of positives. Just think of the last time you lost some money. Even if the loss was just a mere fraction of your wealth, it probably significantly impacted your happiness level for that day. Such situations can really irrationally impact a stock and make it an extreme bargain.

1) Is the weakness temporary or structural?

The first rule when trying to catch a falling knife is to really find out whether the sector weakness is temporary or a structural issue. Temporary issues are often found in growth sectors where oversupply and supply issues are constantly changing places in order to cover for the growing demand, thereby creating short term imbalances.

However, the structural growth quickly solves those issues and the respective investments usually do well over time. In sectors that have structural issues, such as retail at the moment, only a few stocks will rebound while many will continue their decline.

2) Be aware of your psychological biases

According to Daniel Kahneman, Nobel Prize winner and author of Thinking Fast and Slow, when catching a falling knife, investors tend to take action based on intuition rather than on rational analysis. When a stock price moves quickly, people tend to think fast, which is inherent to our fight or flight mechanism instead of taking the necessary time to gather and assess new information to be able to make a rational decision about the situation.

What often leads to wrong investing decisions is anchoring to previous price levels. It's extremely difficult to avoid anchoring your value calculations to a previous stock market price because it is in our nature to do so.

Also, investors tend to think their insight is special and that their insight gives them an advantage over their peers. This could be the case only if the analyst has more research on the matter than anybody else in the field. If not, beware of such overconfidence.

Perhaps the most important factor related to falling knives, is that the market is fundamentally unpredictable. We can try to estimate a company’s earnings in the next few quarters, but seeing beyond that and what the company’s guidance will be is extremely difficult. It is in our human nature to use heuristics and simplify things, so be careful not to fall into that trap when investing.

Before buying a declining stock, first analyze your own behavior. Are you intuitively anchoring the purchase to a past price? Are you allocating extreme value to a not so-important-piece of the puzzle? Are you able to precisely estimate future business and sector fundamentals, or at least better able to than what the rest of the market can? If the answers are yes, or yes and no respectively, look at some other opportunities.

3) Understand the difference between short term oversold and long term trends

The cliché on Wall Street is to never catch a falling knife. Now, if everybody followed the rule of not going near a falling knife, then it would be logical that a stock would quickly become oversold and the stock price move irrational, because there will always be sellers that act on bad news but just as many buyers. Therefore, there must be an opportunity at some point.

From my experience, I would say that the most important thing to do is to carefully analyze the company, take your time by not rushing into a purchase, analyze the sector's dynamics, look at what analysts and investors are looking at, and try to estimate whether future news will be better or worse than expected.

4) Become the specialist in the field or stock

The investing world isn't as big as it looks and there are often just a few analysts covering a stock, especially if it is a small cap. Put more effort into analyzing the sector than what they are paid to do, and you'll quickly get ahead of the competition. To novice investors, Wall Street might seem like an impenetrable castle, but the more you learn about it, the more you will see that it isn't so deep and diligent value investors can find their place in the sun, especially with stocks that are poorly covered because Wall Street can't gain good fees on a small cap for example.

Going in depth into a stock or sector will allow you to see what the analysts from Wall Street don't yet see. It is also important to note that the youngest and less experienced analysts are usually covering the less attractive stocks.

5) Manage your risks

Manage your risk carefully and consider buying options to lower the risk and increase the returns. Your knowledge about the company should give you a pretty good estimation of intrinsic value, but make sure to implement the possible continuation of the negative trend in such a calculation. This is because negative news, much like declining revenues and declining margins, can quickly lower the intrinsic value

you have calculated in the past.

6) Assume the negative trend will continue

When calculating your own intrinsic value, try to assume what will happen to the intrinsic value of the stock if the negative trend continues. If the stock currently trades below your worst-case scenario, then it could be a buy.

Another very important thing to understand is that catching a falling knife is a strategy that isn't linear and therefore when done well, leads to outsized returns. It's very important to always know that you are fallible and that your estimates might be wrong. The best medicine for that is diversification and learning how to say no when not all of your criteria are met, and demand a significant margin of safety.

7) Diversify

Even if your batting average is 50%, with proper diversification your returns should be positive. Let's say you buy 10 falling knives. Of those 10, 5 double in the next year, 2 go nowhere, and 3 go bankrupt. Your return is still 20% which is excellent even if you were right only on 50% of the stocks.

This will also lower your risk and increase the returns as the maximum you can lose is 100% but the upside is unlimited.

8) Stick to the strategy and don't sell after the first increment in price

Apply the same analysis principles to a rising stock in order not to sell too soon. Good news also often compounds, the excitement reaches many investors, and you might get to reap extraordinary returns. Don't sell at the first rise in price, wait for the stock to reach your intrinsic value, especially if there is a trend in the positive news. Catching falling knives is a risky strategy and therefore the expected reward should be high. By selling your winners early and holding on to the losers you might not get to positive returns.

As always, analyze your behavior first and then the stock and the sector. As long as there is a high chance the stock can continue on an

upward trend, take advantage of it.

9) Learn how to say no

Fortunately, the market has so many stocks and opportunities, that learning how to say no in the stock market is of extreme value. You might miss out on some returns, but you'll miss out on even more losses.

10) Look for a large margin of safety

The final rule is an essential for any kind of investment. Look for value and a margin of safety. When the value for shareholders is significantly higher than the current stock price—even in the case of the worst possible scenario including a recession, CEO, CFO resigning, accounting scandal, or dividend cut - bet the farm!

The point is that with falling knives, we should dedicate the same amount of time and effort into analyzing our behavior in relation to the situation as much as trying to rationally analyze the situation itself. When knowing oneself and the company that is analyzed, you will increase your batting average which is the most important thing in investing.

Chapter 14

Food for thought

"Whenever you find yourself on the side of the majority, it is time to pause and reflect."

Mark Twain

Value investing is not all there is in the world of investing

"Great investing requires a lot of delayed gratification" Charlie Munger

In this part of the book I want to share some investment strategies I find extremely appealing and can lead to very satisfying risk adjusted returns especially if combined with a value investing approach.

Value investing is mostly focused on finding a specific stock that is undervalued but often misses the larger perspective of how something fits a portfolio and various life necessities. In this part I'll discuss four very interesting topics I really feel can complement a value investing strategy. I will synthetize Ray Dalio's All-weather approach to investing in order to show how it is also important to look at the economic environment while investing, because it will definitely change during our investment life time and affect our holdings.

Furthermore, from my analysis of Warren Buffett's investing activity I have derived a new concept that I called Temporal Diversification which describes exactly what Buffett has been doing in the past 50 years. Given that many have tax constrains on their portfolio management opportunities or invest for long term passive income it is a wonderful strategy to combine with value investing.

One of my favorite thinkers and investors is Nassim Taleb, author of the book The Black Swan where he describes interesting investment concepts like extremistan and mediocristan which can add a lot of value to the usually mediocristan value investing approach. His research is especially interesting because he shows that the highly improbable is not so improbable after all and investors should be very aware of that.

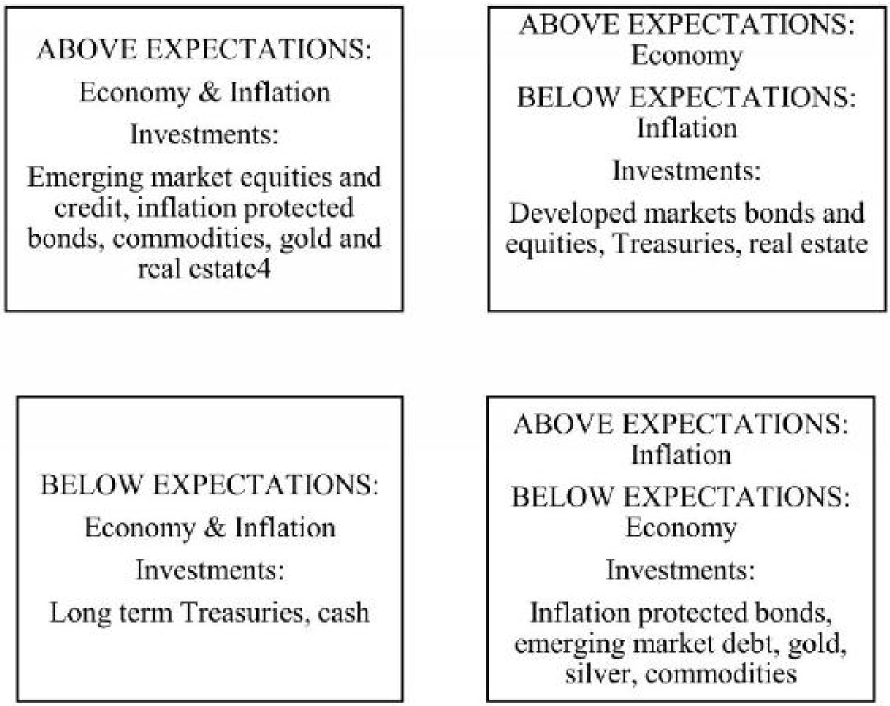
I'll finish this chapter by discussing gold. Even if Buffett has never been attracted to gold, both Ray Dalio and Seth Klarman have significant parts of their portfolio invested in gold miners.

All Weather portfolio

The main goal of an all-weather portfolio is for it to keep risk as low as possible while consistently offering satisfying risk adjusted returns in every economic scenario.

When we sum up everything that can happen in an economy, there are four scenarios that cover it all. An economy can grow below or above expectations while inflation can also be below or above expectations. This creates four different economic environments to which an all-weather portfolio is prepared for.

Figure 39 All possible macroeconomic weather scenarios



Source: Bridgewater

Stocks have done really well in the period from the 1980s till 2017 because of low inflation, lower interest rates and economic growth. However, nobody knows what the environment will be like in the next 35 years. Therefore, by owning uncorrelated assets that constantly create returns over time, one can achieve a satisfying return with much less risk by rebalancing the in-favor assets with those out of favor.

To create an all-weather portfolio, you have to allocate 25% of your portfolio risk to each potential scenario. This is the general theory but the best way to explain the strategy is to actually explain how to create such a portfolio at a certain moment in time.

The usual all-weather portfolio described in the media is 30% stocks, 40% long-term bonds, 15% intermediate bonds, 7.5% gold, and 7.5% commodities. However, such a strategy is wrong from the start because an all-weather portfolio is not about precise portfolio

allocations but is all about risk. Thus, to create one you have to look at what is the risk of a certain asset class in relation to the economic environment and price. Here is where value investing comes in handy. Once you have done that, proceed with the creation of such a portfolio and consequently rebalance according to the changes in risk as soon as a part of the portfolio carries too much or too little risk. A value investing approach to risk, where risk is perceived as the potential for a capital loss and not as previous volatility really helps in proper rebalancing and portfolio allocation.

In the following four economic scenarios I try to build an all-weather portfolio for the current environment while using just a few asset classes to better describe the concept.

Scenario #1: Growing Economy & Inflation Below Expectations

This is the environment we are currently in. If we look at Europe and Japan over the last few years, economic growth has been there but was anemic and inflation was significantly below expectations. In the U.S., economic growth has been a bit better but still just above 2.1% with inflation below the targeted 2%.

The best asset class for such an environment is, of course, stocks. However, we have been in this environment for about 8 years now and asset prices have grown not thanks to economic improvements or growth in earnings, but merely thanks to growth in valuations. That makes general stocks very risky, especially since we know that at current valuations, future 10-year returns, historically, haven't been as positive as we mentioned when discussing the CAPE ratio.

Bonds also carry similar risks to stocks so take into consideration that a 25% or higher decline in a diversified bond portfolio is not to be excluded if interest rates increase.

Scenario #2: A Growing Economy & Growing Inflation

To be exposed to a growing economy with inflation above expectations, which is a scenario not to disregard as emerging markets' demand might spur global inflation, the best thing to do is to own emerging market bonds or dividend stocks alongside

commodities. I prefer commodity stocks because they offer you a yield and their earnings increase disproportionately when commodity prices increase.

As these assets are also risky and can easily fall 50%, it's important to have a similar allocation to them as for the stocks I described above.

Scenario #3: A Slowing Economy & Low Inflation

For this part of the portfolio we have to ask ourselves, what will do well in the next recession? The answer is simple: treasuries.

Now, the amount of treasuries you want to own depends on your risk-reward appetite for the whole portfolio. If you are generally risk averse, you have to look for short term treasuries as they are practically risk free. However, to allocate 25% of your portfolio risk to such an asset class would mean that all other asset classes in your portfolio would make up only a small part of it as the risk for stocks is at least 50% while maybe 5% for short term treasuries.

Longer term treasuries offer much larger upside if interest rates go lower while the downside is also larger if interest rates increase. If you look at a 20-year treasury, I would say that the risk reward is similar to stocks with the downside being potentially 50% with higher inflation and interest rates, while the upside is also high if interest rates fall further. Nevertheless, the current 2.65% yield is already something.

Scenario #4: A Slowing Economy & High Inflation

The answer to this one is easy: gold. If global economies continue to slow down despite future monetary stimulus or high inflation, anything related to gold would skyrocket. I wouldn't be surprised to see gold above $5,000 per ounce in such a scenario. Think $5,000 is too much? Well, don't forget that gold was trading at only just $260 per ounce in 2001. How can you invest in gold? The options are physical gold for the risk averse with a significant allocation to gold ETFs that allow for liquidity and rebalancing. If you prefer more risk, you should go for gold miners or a gold streaming company that is

less risky than actual miners.

The key to an all-weather portfolio

What I've described above is just one attempt to create an all-weather portfolio but I think it is the best way to describe the concept. Understand that with the all-weather portfolio it is all about managing the risks as the risk adjusted returns over time even out. Nevertheless, properly assess how each different asset class fits your portfolio, its current risk reward and how to balance it all so that you sleep well but also do well in any kind of environment. In the example, I only mentioned a few asset classes out of practicality but a proper all-weather portfolio might include all the asset classes mentioned in the above figure.

What I've described above are 4 different asset classes that all offer significant returns at the moment but aren't correlated as their prices will behave differently in different macroeconomic situations. For example, in a global recession with inflation, gold stocks will probably go up while regular stocks will fall. Or in a scenario with low inflation, stocks will do well, treasuries will do well also, while gold won't do well. Nevertheless, if you own a gold streaming company or a low-cost gold miner, you will receive some kind of dividend even in such an environment. As the economy is cyclical you will reap additional gains by properly rebalancing.

The key to an all-weather portfolio is constant rebalancing. This means that as soon as one part of your portfolio becomes more than 30% of your portfolio's risk, you rebalance it down to 25%. You also do the opposite when the risk is lower. For example, when stocks in general trade at a CAPE ratio below 10, history has shown that average 10-year returns are around 10% and negative returns are out of the question. Thus, at such a point, stocks offer extremely low risk and should make up a large part of your portfolio alongside high yielding treasuries. In such an environment, gold prices would probably be sky high so you would sell that part of your portfolio risk to buy stocks.

Temporal diversification

Here I want to introduce a new concept that I derived from studying Warren Buffett's investing activities. He is an excellent study case because he has been investing and still is for the long term, to be more precise and to use his worlds: "My favorite holding period is forever." What struck me from what Buffett did over time is that he did the opposite of what is advised to the average investor. Most financial advisors advise immediate diversification by consulting to invest in a little bit of everything to limit risks.

However, the sad thing is that diversification only limits your upside, not the downside because a 60% stocks and 40% bonds allocation would do terribly in an environment with rising interest rates and slow economic growth. It is important to know that the economy is always cyclical which make the investing environment change pretty often. So, as our investing life cycle is more or less 40 years (or the average life employment span), we have to approach investing by keeping cyclicality in mind.

With Buffett as an example, in 1951 he had most of his net worth in GEICO. In 1961, he put 35% of the partnership's assets in Sanborn Map Company, in 1964 he put 40% in American Express in the aftermath of the so-called "Salad Oil Scandal," in 1973 he bet heavy on the Washington Post during the 1973 stock market slump, from 1976 to 1996 he invested in GEICO to the point of full ownership through Berkshire Hathaway, in 1988, after the 1987 stock market crash, he invested \$1.2 billion in Coca-Cola, and in 1990 he bought 10% of Wells Fargo.

As Berkshire got bigger and bigger, so too did his investments. In 2010, again a year after a crisis, Berkshire bought the railroad company Burlington Northern for \$44 billion, and in 2015 it bought Precision Castparts for \$32 billion among many other acquisitions and stock purchases.

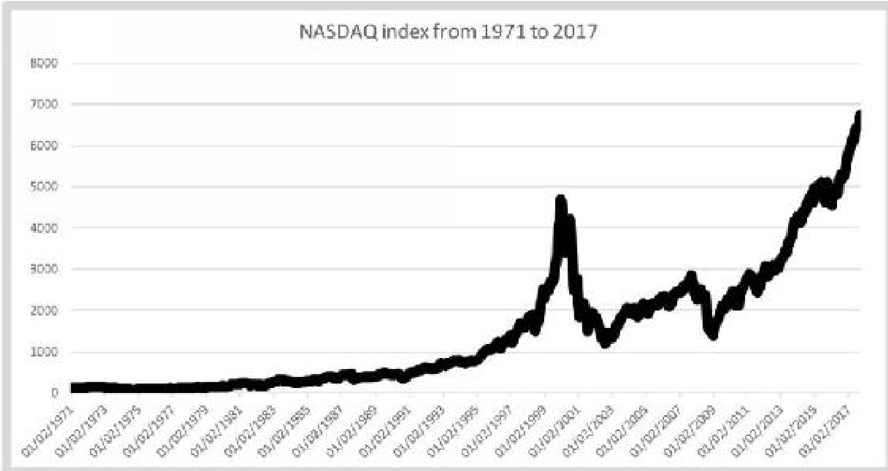
This short summary can teach us how diversification works well, but works even better when you can do it on the cheap by buying

those assets that are in a downturn period like railroads were back in 2010 or like American Express was in 1964.

The benefit of temporal diversification is that you buy when assets are cheap and therefore have a higher dividend yield which fills your pockets with cash and enables you to buy other assets on the cheap later. You don't switch to other stocks when they seem cheaper or a better opportunity at the moment because you still have a great yield if you look at it from the point of your initial investment.

Temporal diversification enables you to be well diversified through your investing lifetime but without overpaying for diversification. For a simple example, let's look at the Nasdaq index. The Nasdaq is the place to go for tech diversification, but the index is much more volatile than the S&P 500 and it gets crushed in recessions only to quickly turn into a bubble in periods of economic growth.

Figure 40 The NASDAQ index



Source: Author's data

Therefore, the logic behind temporal diversification would suggest diversifying your portfolio with tech only in periods of economic downturns. This seems a very strange concept and difficult to grasp especially in an environment where news is constant and economic cycles are easily forgotten, but the average economic cycle since 1945 in the U.S. has been 68.5 months from peak to peak. This means that in our average 40 year investment life span, we will have the opportunity to invest in 7 recessions.

Temporal diversification is a brand-new concept that hasn't been discussed much but is one of the main success factors of arguably the greatest investor of all time. Such a strategy requires a high level of discipline, the courage to invest when others are fleeing a sector or a stock and the character to stick to your guns no matter what is going on at the moment. This is much easier if you possess a high level of knowledge about the long-term outlook of the sectors you are investing in and also of the ones you are avoiding in order to precisely know when a sector or asset is below or above its long-term equilibrium value.

Another issue is that temporal diversification requires a certain amount of cash available when an opportunity arises, which again

points to the discipline factor.

Mediocristan, extremistan and the highly improbable

"Yet they believe blindly in the stock market, and in the abilities of their pension plan manager. Why do they do so? Because they accept that this is what people should do with their savings, because "experts" tell them so. The doubt their own sense, but not for a second do they doubt their automatic purchases in the stock market." Nassim Nicolas Taleb

I'll start this chapter with a personal story that perfectly describes the concepts. A friend of mine just (2017) sold his home in Central London for 2.4 million pounds which is an average price in London. However, what's interesting is that he bought the property in 1996 for just 160,000 pounds. In 20 years, the value of his London property increased 15 times.

Another example I have is from a recent WSJ article where a Park Avenue penthouse is selling for about $18 million. The funny thing is that the property was empty for 27 years as it was owned by the Former Republic of Yugoslavia which also allows us to know what the purchase price was in 1975. The purchase price was $100,000. In 40 years, the value of this property in New York increased 180 times. Similarly, the U.S. stock market has increased 25 times over the last 35 years.

These are very important things to think about because in this quickly changing world, it's necessary to have an investing mindset that allows you to seek such extreme returns. The funny thing is that buying real estate in New York or London back then, or stocks in 1982 at a PE ratio of below 10, seems like a low risk thing to do.

Extremistan vs. Mediocristan

The concepts of extremistan and mediocristan were introduced by Nassim Taleb in his book The Black Swan where he elaborates on the

fact that this world has always been skewed toward the extreme. This is important for investors because most of the data used for analysis discusses averages, but those averages used to calculate portfolio risk, expected returns, etc., are composed of extreme inputs like real estate prices in London or New York, or the rest of the world where many places have seen prices remain almost flat or below inflation, giving the appearance that everything evolves in a stable manner.

But the truth is far more complicated than what average statistics try to show us. The U.S. housing price index went up "only" 7 times, not 180 times since 1975 as has been the case for the New York property discussed above. Similarly, UK home prices increased, on average, 3.5 times in the last 20 years, not 16 times as properties in London did.

This all goes to show that it's extremely important to position yourself in investments that have the opportunity to grow at an extreme in the next 20 years while leaving the average to average investors and the below average to those who just buy whatever is trendy at the moment.

To conclude on extremistan investments, Taleb explains that it's wrong to use averages to measure all things because what makes an average is so variegate, that many things will exceed what we've prepared for, both on the upside and downside. Consequently, if we are in the domain of extremistan, and we use analytical tools from mediocristan for prediction, risk management, etc., we can face enormous surprises. Some of these surprises may be positive and some may be negative, but their impact will likely exceed what we are prepared for.

Let's now define extreme investments in order to have our portfolios surprise on the positive as much as possible.

Defining Extreme Investments

(this was written towards the end of 2017 and it holds a lot of information from that period, at the time you will be reading this the situation will probably be different but that is also the point, things constantly change. Therefore, see the below as a learning experience)

The things extreme investments have in common are limited supply and expected stability.

On the limited supply side, you can't significantly increase the number of New York penthouses nor the number of cozy Central London Victorian houses. So, we have to look for investments where the demand will outpace supply while the supply is relatively fixed.

Given the global expansive monetary policies, we can continue to expect a constant increase in the supply of money which makes price explosions like the ones we described at the beginning of this article even more likely to happen in the future.

On the expected stability end, no one expects a drop of 50% or more in the S&P 500 at this point, so buying out-of-the-money put options is an extreme investment that could lead to a nice payoff.

Investments with Probable Negative Surprises

The current outlook for bonds is extremely risky, especially if we see higher interest rates coming from higher inflation rates. The fact is that many look at the risk of bonds from the perspective of what has happened in the last 35 years when interest rates have only declined making bonds very vulnerable to negative extreme surprises. If we see interest rates suddenly climb to 10% because a central bank around the world loses control over its money supply or people lose confidence in their currencies, we could see a quick spike in interest rates and consequently doom and gloom on bond markets. So bonds are definitely in for a negative extreme surprise in the next decade. If we see a similar situation to the one from 1950 to 1982, where interest rates were constantly rising, the situation will be even worse. Remember, 99.9% of investors use recent stable models to calculate the risk for bonds, just 0.01% of investors look beyond the last few quarters.

A value investor can often find bargains that have extreme potential. As the world is moving very fast it is important to recognize such things and take advantage of them. Just remember that gold prices in 2001 were below $300 per ounce and prices of above $1,000 were unthinkable of and those who would call for such prices were

deemed crazy. In 2011 gold prices were above $1,800 per ounce. Talking about extreme environments, an important thing to discuss is also gold.

The case for owning a bit of gold miners in your portfolio

"If you don't own gold…there is no sensible reason other than you don't know history or you don't know the economics of it…" Ray Dalio

My goal is not to dig deep into gold as an investment but just to mention it as a value hedge and give you some food for thought. My theory is that by putting a few percentages of your portfolio into gold miners, you hedge yourself against anything that might happen while you don't risk much as all you can lose are those few percentage points.

In the next recession, let's say the FED goes into negative interest rate territory alongside new quantitative easing rounds and the S&P 500 drops 50% or more. In such an economic and market scenario, I wouldn't be surprised to see gold at $2,500 or above per ounce. Many gold miners would see their profits explode and stock prices increase at least 10 times. Therefore, a small 5% portfolio allocation to gold miners will probably protect you from a 50% drop in the S&P 500 as the 5% gold portfolio would replace the loss.

Now, you're probably asking yourself, if gold mining stocks can go up 10 times while the S&P 500 can drop 50%, why don't I invest everything into gold miners? Well, it isn't that simple, nobody knows what the future will look like and especially when something will happen. Therefore, it's essential to think in scenarios and prepare your portfolio accordingly for the maximum return at the lowest risk. Let's look at the two most probable scenarios for gold.

The bullish case – gold at $5,000 or even $20,000

Now, when somebody says gold will be at $20,000, most would assume that that person is just another crazy pundit. However, the idea isn't so crazy. If we take a look at past gold price movements, it's clear that the current gold price of $1,338 would have also seemed to

be completely crazy in 1999.

From 1968 to 1980, gold prices increased more than 15-fold. Similarly, from 2000 to 2012, gold prices increased 7-fold. In the 1970s, gold prices were rising due to high inflation levels while in the 2000s, the reasons were declining interest rates, quantitative easing, and financial turmoil.

Now imagine what's going to happen when the next recession hits the U.S. and other developed economies. Every economy works in cycles, but most market participants seem to have forgotten about cyclicality and continue to happily push the S&P 500 to new highs.

Figure 41 Gold prices in the last 50 years

Source: Federal reserve

We already know that the FED, ECB, and BOJ are going to do whatever it takes to provide liquidity to the system just as they have been doing for the past 10 years to postpone any kind or economic downturn. Nevertheless, such behavior will only exacerbate the next crisis because at some point, people will lose faith in money and central banks. When that happens, we will have inflation coming from new quantitative easing programs and low interest rates, financial turmoil coming from negative earnings and defaults, perhaps some political unrest, and I wouldn't be surprised to see gold increase 15-fold, just as it did in the 1970s. Multiplying the current price of gold ($1,338) by 15, I get a value of $20,070 per ounce.

Now, I'm quite convinced we will see gold at $20,000 at some point in the future because the debt burdens developed countries have will require high inflation to be settled as economic growth continues to be slow and there is no sign of faster economic growth. However, I only have a small part of my portfolio invested in gold miners because I don't know when the above scenario will play out. If gold prices fall to $800 or even $600, I need to leave some space to rebalance and

that's impossible to do if I have 50% of my portfolio in gold miners. Let's now discuss the second scenario, one where gold falls back below $1,000.

Gold Below $1,000

If the global economy and especially developed markets continue to grow at current rates for a longer period of time, central banks manage to increase interest rates, trim their balance sheets, and inflation remains under control, I wouldn't be surprised to see gold prices below $1,000, at least in the short term. If gold prices go below $1,000, many gold miners will become unprofitable and perhaps even go bankrupt.

As gold prices depend mostly on sentiment and not on supply and demand, we can't call $1,000 per ounce—which would make 90% of gold miners unprofitable—a bottom price for gold. Therefore, we have to leave the downside open and this has imminent implications for our portfolio allocation.

Portfolio Positioning

If gold goes to $20,000 in the next decade, then any kind of gold related investment would be a jack-pot. But we don't know how long it will take for gold to reach such a level and whether it will fall to $600 before it goes to $20,000. Therefore, you really have to think about what kind of portfolio exposure to allocate to gold.

The easiest thing to do is to take a fixed percentage and then rebalance accordingly until something important happens, like a recession, when you could think about letting your gold gains run.

By allocating 5% of your portfolio to gold investments, you protect yourself from future potential financial turmoil coming from the unprecedented monetary easing policies and low interest rates combined with slow economic growth. If you can stomach volatility, I would definitely go for gold miners. But if you prefer more stability, then actual gold would also do the trick of protecting your portfolio where you limit your downside but the upside is also trimmed. In order to allow for liquidity and make rebalancing easy, a Gold ETF

doesn't seem like such a bad idea.

So, gold and gold miners are an investment where you can lose even 90% of your investment but also make 10, 20, or even 50 times more than what you invested, plus you are hedged against economic turmoil and loose monetary policies. Not such a bad risk reward investment, now is it?

A value investor can consequently look at the value of the gold that is still in the ground in the form of mining reserves because that can become very valuable with higher gold prices while now it is probably discounted to zero. As always, a value investing approach helps in individuating interesting investing opportunities that provide value and opportunities at a low cost.

Personal investing story

I'll finish this book with a personal story about what investing meant to me in my life. I went to a gymnasium which is like a preparatory high school where we had absolutely no economic education. Fortunately, when I was around 18 (2001), I read a book about investing, Kiyosaki's Rich Dad Poor Dad where he explained how he had invested at $5 and sold a stock at $10 a bit later. As an 18-year-old kid I was intrigued and started looking at stocks. By learning more I saw that stocks do indeed go up and that the lower the price-to-earnings ratio the higher the return on investment should be according to Buffett.

So, at 19 (2002 – lucky break), I bought my first stocks. It was a water bottler with a price to earnings ratio of 6 and the other was a telecommunication equipment provider, subsidiary of Ericson with a price to earnings of 3. Both companies had extremely low valuations due to the high illiquidity and fears of delisting but fortunately I didn't know that was an issue and invested. Without knowing I was following Buffett's advice to invest as if the stock market would close for ten years the minute after you invest.

The investments I bought became 5 baggers and when I was 23 (2006) I was rich for my age, bought a boat, enjoyed diving in the Mediterranean see, finish my economic education and wasn't investing at all for two years. Started investing again in 2008 on the NYSE and lost a bit of money but that didn't discourage me from buying everything that I could buy in the 2009 to 2012 period. I mostly purchased a holiday camping stock in Croatia that paid a 10% dividend and was about to be connected to the rest of Europe with a brand-new highway. Needless to say, the investment became another 5 bagger which paid for my Ph.D. and a move to London that allowed me to find a job at Bloomberg which was followed by a teaching job at the University of Applied Sciences in Amsterdam where I was teaching International Financial Accounting.

On the academic side, as a teacher I wanted to grow and saw it as

the next step. I was awarded a Ph.D. for creating a Real Value Risk estimation model for emerging markets. You can find the summary of it if you google 'SSRN Sven Carlin'. The long short of the thesis is that value investing works as it not only leads to higher long term returns but also lowers the investing risk.

I did also lose money twice, in 2008 in the crisis and in 2010 as I tried to invest in the shipping industry. Nevertheless, the losses there were about 50% both of the times but those were covered by the huge returns on other investments and this is exactly why I think everyone should invest: you can only lose what you invest but the gains are unlimited.

I hope that you enjoyed the book, and that it will add value to your investments and to your life in general by lowering your financial risks and increasing your returns.

Please check www.svencarlin.com for more info about me, my research, asset management, educational investing courses and other.

[1] An out of the money call option is one where the strike price is higher than the market price, or lower than the market price for a put option. In any case, if the stock price doesn't move the option will expire worthless.
[2] According to data from Professor Kenneth French of the Tuck School of Business at Dartmouth College, value investing has beaten growth investing in 84 out of 90 measured subsequent 10 year returns since 1926.
[3] Due to falling stock prices, when a leveraged investor's collateral falls under a certain required minimum, his broker automatically closes his positions, putting more pressure on declining stock prices.
[4] by Daniel Kahneman and Amos Tversky Econometrica, 47(2), pp. 263-291, March 1979
[5] Kahneman, D. & Tversky, A. (1992). "Advances in prospect theory: Cumulative representation of uncertainty". Journal of Risk and Uncertainty. 5 (4): 297–323.
[6] http://investor.apachecorp.com/releasedetail.cfm?ReleaseID=957024

[7] https://www.daimler.com/documents/investors/reports/annual-report/daimler/daimler-ir-annualreport-2016.pdf
[8] https://www.daimler.com/dokumente/investoren/praesentationen/daimler-ir-automotivecreditconference-20130516.pdf
[9] Daimler 22 December 2017, ad hoc release – Investor relation news